

A CONTRIBUTION TO THE KNOWLEDGE OF THE ORTHOPTERA OF  
ARGENTINA.

BY JAMES A. G. REHN.

The present paper is based entirely on collections made by Mr. P. Jorgensen, of Buenos Aires. These collections were sent either direct to us for study or through Mr. Esben Petersen, of Silkeborg, Denmark, to whose interest we are obligated for much of the material treated in the paper. In addition to thanking these gentlemen for the opportunity to study the present collections, we also wish, on behalf of the Academy, to thank Mr. Jorgensen for the very important additions received from the collection, by far the greater portion of which, including all the types and unique specimens, remain in the Academy series.

The entire series, collected over the greater portion of northern and north-central Argentina, comprises ten hundred and twenty specimens, representing one hundred and sixty-two species, of which three genera and twenty species are new to science.

The general regions represented in the collections are:

*First.* Territory of the Misiones. The extreme northeastern extension of Argentina extending between the Paraná and Uruguay Rivers, which respectively separate it from Paraguay and Brazil. In consequence of its position it has a far greater proportion of tropical types than any other portion or portions of Argentina.

*Second.* Province of Corrientes. Southwest of the Misiones and between the same rivers, but of a less tropical character.

*Third.* Province of Jujuy. The extreme northwestern province, forming part of the Bolivian boundary. This is a region characterized by a number of types of Orthoptera peculiar to it or shared with Bolivia or the province of Salta to the south and east.

*Fourth.* Province of Salta. This province is next south of Jujuy, which it also bounds on the east, the latter portion forming part of the Chaco region.

*Fifth.* Province of Tucuman, South of Salta and at the east base of the Andean uplift, part of which is within the province.

*Sixth.* Provinces of San Juan and Mendoza. These are in the west-central part of the country, forming a considerable part of the Chilean frontier and including conditions from the plains to the

summits of the Andes. Mr. Jorgensen has kindly furnished us with the following information on these two provinces, which he has examined with considerable care. "Provincia de Mendoza is unusually dry and exceedingly hot (extreme heat 42° C.). Rain falls as a rule in local showers, although occasionally there are heavy rainfalls with terrific thunderstorms. As a rule, the sky is cloudless, and the temperature, even in summer, often falls to a considerable degree at night. In the district around the town of Mendoza it freezes not rarely at night during the 'winter' months (May-September), although even at this elevation to see a layer of snow in the morning is rare, and in any event, even in the coldest months, snow never has the opportunity of laying, for it can be quite hot towards midday. Only high up and in the front range of the Cordillera de Mendoza the snow lays for long periods in the very coldest months. In the lowlands, or rather the flat lower lying districts, east of the Cordilleras, the ground is composed of alluvial strata of an ash-gray, finely powdered clay soil, which bears a rich bush vegetation, the gray color of which, together with its adaptation to the climate, points to an ancient desert vegetation. A large proportion of the plants, quite apart from the cacti, are thorny and spiky, the Spanish name 'Espinales' thus suiting the district admirably. The grass fruits are often prickly and also in a single instance mechanical flycatchers. Many of the plants here are very aromatic or contain quantities of resin. At the transition point between the lowlands and the Cordilleras, the ground is more or less rising, here and there swamps are to be found, often strongly impregnated with saltpeter, and nearly everywhere are to be found stones (rolling stones), or even pieces of rock, mixed with the earth. The front ranges of the Cordilleras, which rise to the west of the city of Mendoza, are partly solid rock and partly products of disintegration. These are covered with the very same plants as the lowland (*Covillea divaricata*, *Gourhaea decor-ticans*, *Prosopis campestris* and *alpataco*, *Acacia furcata*, *Senecio mendocinus*, *Suaeda divaricata*, etc.). Localities: Mendoza (767 meters above the sea), Chacras de Coria (936 meters), nine kilometers more southerly, both at the foot of the first range, Precordillera de Mendoza; Punta del Agua and Blanco Encalada (1,068 meters) in the mountains and railroad stations on the Ferro Carril Transandina; Potrerillos (1,368 meters) and San Ignacio (1,325 meters), railroad stations in a large valley in the second range, Cerro Negro, on the Rio Mendoza; Pedregal (696 meters), seventeen kilometers east of Mendoza, swamps; La Paz (504 meters), forty-eight kilometers

southeast of Mendoza on the Rio Tunuyan. The Provincia de San Juan is similar to Mendoza, but hotter and drier."

*Seventh.* Province of San Luis. East of Mendoza and, according to Mr. Jorgensen, of the same nature and condition as around Mendoza.

*Eighth.* Province of Cordoba. East of San Luis and forming a considerable part of the great "Pampa."

*Ninth.* Vicinity of Buenos Aires. The immediate vicinity of the capital, a historic zoological locality, is represented by quite a number of specimens.

The total number of species represented aside from the new forms is one hundred and forty-two, of which fifty-six are here recorded from Argentina for the first time. Of these fifty-six, forty-nine are recorded only from the Misiones. Of the total of one hundred and sixty-two species, one hundred and sixteen are recorded from the Misiones. These figures give some idea of the richness of the Misiones territory in Orthoptera.

A tabulation of the distribution of the entire list of species shows, among other things, the following interesting features:

One hundred and sixteen species recorded from the Misiones.

Twenty species recorded from the Misiones and west of, but not south of, the same.

Forty-seven species recorded from Brazil, Paraguay and the Misiones alone in Argentina.

Thirty-two species recorded from the Misiones and the Pampan region, also northward, but not westward.

Seventeen species recorded from Buenos Aires westward to Mendoza. (Typical pampan and plains forms.)

One species recorded only from Jujuy and the Pampas.

Three species recorded only from the Chaco, Jujuy, and Tucuman.

The distribution of all of the species treated has been given in the paper, and, aside from the new ones, the forms here recorded from Argentina for the first time bear an asterisk before their names.

#### Family **BLATTIDÆ.**

##### Subfamily **PSEUDOMOPINÆ.**

\* *Pseudomops neglecta* Shelford.

1906. *P[seudomops] neglecta* Shelford, Trans. Ent. Soc. London, 1906, p. 256.  
[Rio Grande do Sul, Brazil.]

Misiones. December 20. (No. 4.) "Common on flowers."  
Two males, one female.

While fully agreeing in every other way with the description of the species, which was based on a single female, the males are found to lack the pale annulus on the antennæ, which is marked in the single female.

The measurements of the specimens are as follows:

	♂	♂	♀
Length of body.....	8.6 mm.	8.5 mm.	9. mm.
Length of pronotum.....	3. "	3. "	3.2 "
Greatest width of pronotum	3.2 "	3.3 "	3.6 "
Length of tegmen.....	8. "	8.2 "	8. "

This species is now known from southern Brazil (Rio Grande do Sul), Uruguay (Montevideo; Shelford), eastern Paraguay (Puerto Bertoni),<sup>1</sup> and northern Argentina.

***Ischnoptera rufa* Brunner.**

1865. *[Ischnoptera] rufa* Brunner, *Nouv. Syst. Blatt.*, p. 131, Pl. III, figs. 13a-c. [Brazil; Porto Rico.]

Misiones. December 2, 1910. (No. 5.) Two males.

We have no previous Argentine records of this species aside from that from San Lorenzo, Jujuy (Giglio-Tos).

***Ischnoptera marginata* Brunner.**

1865. *[Ischnoptera] marginata* Brunner, *ibid.*, p. 132. [Brazil.]

Misiones. December 20, 1910. (No. 8.) One female.

This specimen is perfectly typical of the species. The nearest definite localities from which the species has been recorded are Sapucay and Villa Rica, Paraguay, and Salta, Argentina.

***Ischnoptera brasiliensis* Brunner.**

1865. *[Ischnoptera] brasiliensis* Brunner, *ibid.*, p. 131, pl. III, figs. 12a-c. [Brazil.]

Misiones. December, 1910. Two males.

Pedregal, Mendoza. December 14, 1906. One male.

The Pedregal specimen shows no differences from the Misiones individuals. The species has also been recorded from San Lorenzo, Jujuy, Oran, Salta and San Pablo, Tucuman (Giglio-Tos), Rio Negro, Sierra de Corrumalan, Carmen de Patagones (Berg), and Bahía Blanca (Saussure), Argentina; Sapucay, Paraguay (Caudell and Rehn), and Uruguay (Berg).

<sup>1</sup> The acquisition of the present material enables us to identify the broken specimen of this genus from Puerto Bertoni recorded by us as *Pseudomops* sp. (*Ent. News*, XXII, p. 247) as this species.

**Blattella germanica** (Linnæus).

1767. [*Blatta*] *germanica* Linnæus, Syst. Nat., 12th ed., p. 688. [Denmark.]  
Misiones. February 4, 1910. (No. 3.) One female.

## Subfamily NYCTIBORINÆ.

\* *Nyctibora limbata* (Thunberg).

"1826. *Blatta limbata* Thunberg, Mém. l'Acad. Imp. Sci. St. Pétersb., X,  
p. 277."

Misiones. January, 1911. (No. 9.) One male.

We have followed Shelford in using *limbata* for the species usually called *sericea* Burmeister. The set of the Mémoires in the Academy library unfortunately lacks volume ten, so we are unable to verify this reference. The present specimen has but four tarsal joints in the right caudal tarsus and another male from Puerto Bertoni, Paraguay, has the same true of the left caudal tarsus.

This species has been recorded by the author from Puerto Bertoni, Paraguay, but it is here reported from Argentina for the first time.

## Subfamily EPILAMPRINÆ.

**Rhincoda jorgenseni** n. sp.

Type: ♀; Misiones, Argentina. December 2, 1910. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,210.]

Closely resembling *R. rugosa* Brunner, from the Oriental region, but differing in the proportionately broader abdomen, the broader and less produced supra-anal plate, which is also much more shallowly divided, and in the smaller size.

Size medium; form greatly depressed; surface of the dorsum coriaceous. Head with only the extreme cephalic portion of the vertex visible beyond the pronotum; facial portion strongly depressed and flattened; interocular space equal to twice the depth of the eye, rugulose, the occipital outline moderately arcuate, very narrowly rounded in section; antennæ subequal to half the length of the body. Pronotum semicircular in form, the cephalic and lateral margins regularly arcuate, caudal margin subtruncate with the faintest possible very low broad median projection, lateral angles very narrowly rounded. Caudal margins of the meso- and metanotum arcuato-emarginate, that of the metanotum more decidedly so than that of the mesonotum, the median projection of the metanotum more decided than that of the pronotum or the mesonotum. Tegmina equal to about two-thirds of the length of the pronotum, lateral, squamiform, the basal width of the same but little less than

the length, external margin slightly arcuate, internal margin more

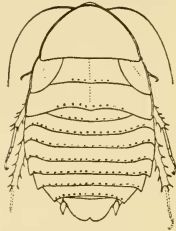


Fig. 1.—*Rhicnoda jorgenseni* n. sp. Dorsal outline of type. ( $\times 1\frac{1}{2}$ .)

decidedly arcuate, the external margin thickened and projecting distad of the internal margin at the apex as a minute point; apex of the tegmina slightly surpassing the margin of the mesonotum. No wings present. Abdomen slightly broader than the thoracic segments; caudal margins of the segments with low, regularly placed ridges, such as are found in other species of this genus; caudo-lateral angles of the segments acutely produced; supra-anal plate transverse, the length contained about twice in the greatest width, the margin regularly arcuate with a shallow median rectangulate emargination; cerci no

more than half the length of the supra-anal plate, broad fusiform, depressed; subgenital plate broad, the general outline of the plate arcuate with a shallow emargination by each cercus. Cephalic femora with the ventro-cephalic margin with four median spines, the ventro-caudal margin with three spines on the distal half; median femora with five spines ventro-cephalad, one of which is apical, ventro-caudal margin with the same number, but with the spines more regularly placed; caudal femora with the ventro-cephalic margin with five spines similarly disposed to those on the same margin of the median femora, caudal margin with spines but one or none; caudal tarsi missing in the type specimen.

General color above vandyke brown, the tegmina and the lateral portions of the metanotum prout's brown, the abdominal ridges weakly lined with seal brown. Ventral surface chiefly tawny-olive, the abdomen broadly but indefinitely bordered with seal brown, the paler portions with numerous spots of the same color, these spots being placed on very low and not very distinct tubercles, a narrow medio-longitudinal line of seal brown indicated on the venter of the abdomen. Head ventrad to below the eyes seal brown; eyes and antennæ clove brown. Limbs becoming burnt umber distad.

#### Measurements.

Length of body.....	22.5 mm.
Length of pronotum.....	6. "
Greatest width of pronotum.....	11. "
Length of tegmen.....	4. "
Greatest width of abdomen.....	14. "

The type of this species is unique. It is quite singular that the present species shows no close relationship to any of the previously known American forms of this peculiar genus, while its close affinity to the Oriental *rugosa* is immediately apparent when the two are examined.

We take pleasure in dedicating this interesting species to the collector, Mr. P. Jorgensen, to whom we are indebted for the opportunity to study the very remarkable collection of Argentine Orthoptera treated in the present paper.

***Epilampra stigmatiphora*<sup>2</sup> n. sp.**

Type: ♂; Misiones, Argentina. February 8, 1910. (P. Jorgensen; No. 1.) [Acad. Nat. Sci. Phila., type No. 5,211.]

This new form is a very interesting species apparently allied to *E. testacea* Brunner, from Brazil, and *caizana* Giglio-Tos, from Bolivia, differing from the former in the color pattern of the head and pronotum and in the covered portion of the tegmen being no darker than the general color, and from *caizana* in the greater size, in the more rotundate median protuberance of the caudal margin of the pronotum, the non-punctate margins of the same, in the blackish humeral trunk of the tegmina and the non-punctate limbs.

Size medium. Head very slightly projecting beyond the pronotum, considerably depressed; interocular space nearly one and one-half times the depth of the eye, the outline hardly rounded when seen from the dorsum, the eyes well rounded; paired ocelli enormous in size, elliptical in outline, converging ventrad, slightly impressed; antennæ slightly longer than half of the body length. Pronotum of the form found in most species of the genus, cephalic margin regularly arcuate from the lateral angles except for a slight flattening dorsad of the head, lateral angles very narrowly rounded obtuse-angulate, lateral margins moderately convergent caudad, caudal margin appreciably produced mesad into a broad rounded expansion, laterad of which the margins are arcuato-emarginate; disk with two pairs of impressed punctures slightly cephalad of the middle, the usual transverse creasing of the surface toward the caudal margin distinct but not deep. Tegmina surpassing the apex of the abdomen by about half the pronotal length, moderately broad, the median half subequal in width; costal margin moderately arcuate in the proximal

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<sup>2</sup> Στεγματοφόρος, bearing landmarks.

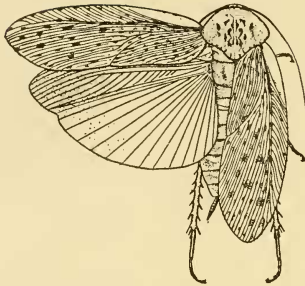


Fig. 2.—*Epilampra stigmatiphora* n. sp.  
Dorsal view of type. ( $\times 1\frac{1}{2}$ .)

half, then straight and finally narrowly rounding to the apex, sutural margin subrect in the proximal two-thirds, thence arcuate oblique-truncate to the well-rounded but in general form acute apex; venation prominent; anal field very elongate pyriform, the anal vein reaching the sutural margin mesad. Wings ample, the greatest width contained one and two-thirds times in the length of same; costal margin moderately arcuate distad, apex rotundato-rectangulate; region of the costal veins coriaceous, subopaque; anterior ulnar vein with three complete and eight incomplete rami; anterior field of the wing very broad. Abdomen strongly depressed; supra-anal plate broad, produced, rounded, with a median rectangulate emargination; cerci subfusiform, the distal extremity attenuate; subgenital plate broad, rounded, slightly asymmetrical, slightly impressed at the insertion of the styles, the latter very small. Cephalic femora with the ventro-cephalic margin armed with four or five spines mesad and a single distal one, the area between supplied with very short setiform spinulations. Median and caudal limbs with the ventro-cephalic margins of the femora supplied with five spaced spines. Caudal metatarsi very slightly longer than the remainder of the tarsus, biseriato-spinulose ventrad, pulvillus small, distad.

General color cream-buff, the tegmina, aside from the costal portion, nearly uncolored translucent, maculations vandyke brown and where less decided russet. Head with the occiput having a large maculation of vandyke brown divided cephalo-caudad by a line of the base color; region from the middle of the interocular space to the middle of the interocellar space russet with a decided vandyke brown section dorsad; eyes seal brown; antennae, except for the pale proximal joint, bistre. Pronotum thickly speckled with fine vandyke brown points with less frequent rather regularly placed larger dots of the same color, a median sublyrate pattern, part of which is made up of a transverse series of eight large dots, of the same color; caudal margin with a series of well-spaced points. Tegmina with a short sinuous line on the base of the humeral trunk seal brown, the well-



scattered points, which sometimes resolve themselves into larger blotches, russet. Wings hyaline with the veins of the anterior field very pale russet and of the posterior field vandyke brown, the coriaceous portion of the costal margin buffy. Limbs and ventral surface pale clay color, the latter finely speckled with vandyke brown and with larger paired lateral patches of the same color, the former darkening in color distad, the spines tawny.

*Measurements.*

Length of body.....	23. mm.
Length of pronotum.....	6. "
Greatest width of pronotum.....	7.5 "
Length of tegmen.....	22.5 "
Median width of tegmen.....	7.4 "

In addition to the type, we have examined six paratypes (taken January 1, February 8, October 1, and December, 1910) which differ little from the type. The size shows almost no variation, while color differences are wholly in the degree of density of the fine brownish punctations on the tegmina. In this respect the type represents one pale extreme, from which the series grades to the other extreme, represented by one specimen, in which these small spots are much more abundant and generally distributed on the tegmina, being well marked on the costal field. The larger maculations of the tegmina of the type are represented in the darker individuals by smaller, vandyke brown, more sharply cut ones, while the lining of the humeral trunk is broader, solid, and decidedly striking.

\* *Epilampra verticalis* Burmeister.

1838. *E[pilampra] verticalis* Burmeister, Handb. der Entom., II, Abth., II, pt. 1, p. 505. [Brazil.]

Misiones. November 2, 1910. (No. 6.) One female.

All of the previous records of this species are from Brazil.

Subfamily BLATTINÆ.

*Periplaneta brunnea* Burmeister.

1838. *P[eriplaneta] brunnea* Burmeister, *ibid.*, p. 503. [Chile; Demerara.]

Embarcacion, Salta. April, 1911. One female.

This specimen shows no differences from a pair from Caiza, Bolivia. The species has been recorded from San Lorenzo, Jujuy, Argentina, Aguairenda and Caiza, Bolivian Chaco and Colonia Risso, upper Paraguay (Giglio-Tos).

## Subfamily PANCHLORINÆ.

***Panchlora thalassina*** Saussure and Zehntner.

1893. *Panchlora thalassina* Saussure and Zehntner, Biol. Cent.-Amer., Orth., I, pp. 91, 93. [Guatemala; Santa Catharina, Brazil; La Plata, Argentine Republic.]

Misiones. April 20, 1910; November, 1910. (No. 2.) One male, one female.

The above fully agree with material from Puerto Bertoni, Paraguay. The form has been reported from Sapucay, Paraguay (Caudell) and Tala, Salta and San Lorenzo, Jujuy, Argentina (Giglio-Tos).

## Subfamily BLABERINÆ.

**\**Monastria biguttata*** (Thunberg).

"1826. *Blatta biguttata* Thunberg, Mém. l'Acad. St. Pétersb., X, p. 276, pl. 14."

Misiones. January 29, 1911. (No. 10.) "Common." One female.

This specimen is very interesting as, while it fully agrees with the descriptions of the female of this species in every other respect, according exactly in the form of the tegminal margins, it differs in the tegmina being distinctly longer than in the more usual type described. The tegmina in our specimen cover nearly half of the abdomen and are nineteen millimeters in length from the point of attachment to the extreme portion of the margin. The previous descriptions give the length of the tegmina as from ten to twelve millimeters.

All of the older records of the species are simply from "Brazil." The present author has recorded a male from Yaguarasapa, Paraguay, while Giglio-Tos<sup>3</sup> has recorded what is in all probability this or a congeneric species from Paraguay as *Blabera fumigata*, a peculiarly Cuban species, the female of which resembles this genus.

**\**Blaberus fraternus*** Saussure.

1864. *Blabera fraterna* Saussure, Mém. l'Hist. Nat. Mex., III, p. 241. [South America; Cuba?]

Jujuy. April, 1911. One female.

This specimen shows a few differences from the original description, which was based on the male sex, but these are probably only sexual. In all the more important characters, which would be shared by both sexes, our specimen agrees with the description. The pronotal

<sup>3</sup> Zoolog. Jahrb., Abth. Syst., VIII, p. 805.

patch is considerably extended laterad along the caudal margin and is sharply cut out on the sides. This form belongs to the same group of species as *minor*, and to which apparently belongs *brasilianus* Saussure and *sulzeri* Guérin.

We know nothing definite regarding the distribution of this species.

Subfamily CORYDINÆ.

*Melestora fulvella* n. sp.

Type: ♂; Misiones, Argentina. December, 1910. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,212.]

This species, the first of this very peculiar genus seen by us, differs from *adpersicollis* and *fuscella* Stål, both from Rio Janeiro, in the smaller size, non-lineate pronotum, and very much more uniform coloration.

Size small; form moderately depressed; body, except pronotum and tegmina, covered with fine ochraceous pile. Head but very slightly projecting beyond the pronotum, outline of the occiput subtruncate; interspace between the eyes broad, about equal to one and one-half times the greatest depth of the eye, this region and the equally broad interantennal section impresso-punctulate; eyes elongate pyro-reniform in outline; antennæ subequal to the body in length. Pronotum transverse elliptical in outline, the cephalic margin subtruncate, lateral portions moderately declivent; surface polished. Tegmina surpassing the apex of the abdomen by more than the length of the pronotum, very slightly inferior to the tips of the wings, sublanceolate in outline; costal margin gently arcuate, sutural margin straight in the proximal two-thirds and thence arcuate to the rather broadly rounded apex; venation of the peculiar type found in this genus, the transverse veins forming regularly subquadrate or subrectangulate areas, the surface of these areas as well as the costal field minutely papillose; costal veins seven in number; anal vein joining the sutural margin at about a third of the length from the base. Supra-anal plate with the distal margin arcuate; subgenital plate asymmetrical; cerci depressed, hardly tapering, apex moderately acute.



Fig. 3.—*Melestora fulvella* n. sp. Outline of tegmen of type. (× 4.)

General color rather pale ochraceous, on the disk of the pronotum inclined toward tawny. Occiput ferruginous, passing into hazel on the lower face; eyes clove brown; antennæ drab.

<i>Measurements.</i>	
Length of body.....	7. mm.
Length of pronotum.....	1.8 "
Greatest width of pronotum.....	2.2 "
Length of tegmen.....	7.7 "
Greatest width of tegmen.....	2.7 "

The type of this interesting species is unique.

Family MANTIDÆ.

Subfamily ORTHODERINÆ.

\* *Mantoida burmeisteri* (Giebel).

1862. *Ch[atassa] burmeisteri* Giebel, Zeitschr. für die Gesammt. Naturwiss., XX, p. 316. [Neu Freiburg, State of Rio de Janeiro, Brazil.]

Misiones. January 26, 1911. One male.

This is the first record of the species since the original description.

Subfamily MANTINÆ.

*Acontista bimaculata* Saussure.

1870. *A[contista] bimaculata* Saussure, Mittheil. Schweiz. Entom. Gesell., III, p. 229. [Brazil.]

Jujuy, Province of Jujuy. April, 1911. One male.

Misiones. January 31, 1911; February 15, 1911; October, 1910; October 30, 1909. (No. 10.) Six males.

A single Misiones male (October 30, 1909) has the head, pronotum, and cephalic coxæ washed with orange. An individual of the same sex from Sapucay, Paraguay, now before us, has the same color present but more extensive, coloring the femora as well.

The only previous Argentine record is from San Lorenzo, Jujuy (Giglio-Tos). The other known records of the species are from Paraguay (Giglio-Tos); Sapucay, Paraguay (Caudell, Rehn); Asuncion, Paraguay (Giglio-Tos); Rio Grande do Sul, Brazil (Saussure); Goyaz, Brazil (Saussure), and Chiquitos, Bolivia (Saussure).

*Brunneria brasiliensis* Saussure.

1870. *B[runneria] brasiliensis* Saussure, *ibid.*, p. 240. [Brazil.]

Misiones. March 15, 1910. (No. 2.) One male.

This is the second record of the species from Argentina. Other records of the form show its range to extend from Brazil and Paraguay (specifically from Sapucay) west to San Lorenzo, Jujuy, Argentina.

*Brunneria subaptera* Saussure.

1869. *B[runneria] subaptera* Saussure, *ibid.*, p. 71. [Argentine Pampas.]

Buenos Aires. May 1, 1909. One female.

This species has been recorded from northern Patagonia north to Carcaraña and Buenos Aires.

The Genus **COPTOPTERYX**.

In studying the material in the present collection belonging to the genus *Coptopteryx*, we have found it necessary to make a preliminary revision of the genus, examining all the available material belonging to the same. From the present series, the Academy Collection and the Hebard Collection we have assembled fifty specimens, and from a careful study of this series it is evident that considerable confusion has existed in all previous work on the genus, including that by the present author. A large portion of this confusion is directly traceable to Saussure's error in using Blanchard's name *crenaticollis* for a species distinct from that author's *gayi*, when, as shown by the present material, they are clearly sexes of the same species.

It is evident from our material that almost all of the species<sup>4</sup> of the genus show very considerable size variation, that venational characters are very unreliable, and also that green phases with hyaline tegmina and wings in the male, and brown phases with infumate or infusate tegmina and wings in the same sex probably will be found in the same species, although we have little conclusive evidence regarding the color phases.

The following key has been constructed from the material before us and we trust it will be found serviceable.

*Males.*

- a.—Size medium to large. Shaft of pronotum not strongly constricted mesad. Width of head contained at least two and one-half times in the length of pronotum.
- b.—Size large (body 56.5–79 mm.; pronotum 15–21.2).
- c.—Greatest width of the pronotum contained not more than three and one-half times in the length of the same.
- d.—Wing narrower, the breadth contained more than twice in the length ..... *argentina* (Burmeister).
- dd.—Wing broader, the breadth contained less than twice in the length ..... *claraziana* Saussure.
- cc.—Greatest width of the pronotum contained at least four times in the length of the same ..... *thoracica* n. sp.
- bb.—Size medium (body 43.5–54 mm.; pronotum 11.3–14.8),  
*gayi* (Blanchard).
- aa.—Size small. Shaft of pronotum strongly constricted mesad. Width of head contained less than twice in the length of pronotum ..... *constricta* n. sp.

<sup>4</sup>The species *Mantis gymnopyga* Burmeister and *Mantis grisea* Philippi, which have been questionably referred to this genus, do not appear to belong here. Philippi's *grisea* is clearly a nymph of another genus as suggested by Saussure.

*Female.*

- a.—Lateral margins of the pronotum regularly and finely denticulate. Tegmina with the discoidal and anal fields unicolorous. (Form robust.).....*argentina* (Burmeister).
- aa.—Lateral margins of the pronotum strongly spinose, the spines with regularly intercalated spinulations. Tegmina with the discoidal and anal fields bicolored.
- b.—Size medium to large. Pronotum with the length of the collar contained over twice in that of the shaft.
- c.—Size large (body 62–80 mm.; pronotum 19–25.3).
- d.—Pronotum broader, the greatest width contained about three times in the length, shaft weakly carinate. Cephalic limbs more robust.....*claraziana* Saussure.
- dd.—Pronotum more elongate, the greatest width contained about four times in the length, shaft decidedly though finely carinate. Cephalic limbs slenderer,  
*thoracica* n. sp.
- cc.—Size medium (body 44–54 mm.; pronotum 13.2–15.8),  
*gayi* (Blanchard).
- bb.—Size small. Pronotum with the length contained not more than twice in that of the shaft.....*constricta* n. sp.

***Coptopteryx argentina*** (Burmeister),<sup>5</sup>

1864. *M[antis] argentina* Burmeister, Berl. Entom. Zeitschr., VIII, p. 208. [Argentina between Buenos Aires and Mendoza.]

Misiones. January 18, 1910. (No. 1.) One male.

Mendoza, Prov. of Mendoza. Elev. 767 meters. May 2, 1908. One female.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 20, 1908; March 9, 1908; April 5 and 11, 1907. Four females.

Cordillera de Mendoza. March 22, 1908. One male.

Of this species we have before us a series of eleven males and fifteen females, from the evidence of which we know there is a great amount of individual variation in size. The two males from Sapucay previously recorded by us as *crenaticollis* (*vide infra*) are considerably smaller than any other specimens of that sex, although the largest male individual is from the same locality. The females of the Sapucay series show very similar, but somewhat less decided size variation, while those from the Province of Mendoza average considerably smaller, yet show much variation among themselves.

Measurements of the extreme individuals are as follows:

<sup>5</sup> To this species belongs the male material from Sapucay, Paraguay, recorded by us as *crenaticollis* (*Proc. Acad. Nat. Sci. Phila.*, 1907, p. 155).

	Length of body. mm.	Length of pronotum. mm.	Greatest width of pronotum. mm.	Length of tegmen. mm.	Length of cephalic femur. mm.	Length of caudal femur. mm.
♂ Sapucay, Paraguay. [Hebard Coll.].....	56.5	15.	3.8	37.5	11.8	18.
♂ Sapucay, Paraguay. [Hebard Coll.].....	79.	21.2	5.5	53.3	18.	28.
♂ Cordillera de Mendoza. [A. N. S. P.].....	64.	17.	4.7	48.	13.7	20.5
♂ Misiones. [A. N. S. P.].....	76.5	20.8	5.2	53.2	16.5	26.5
♀ Sapucay, Paraguay. [A. N. S. P.].....	67.	21.	6.5	8. <sup>6</sup>	18.	20.
♀ Sapucay, Paraguay. [A. N. S. P.].....	77.	25.3	8.2	13.7	22.2	24.5
♀ Mendoza. [A. N. S. P.].....	64.	19.	6.2	13.	16.5	18.2
♀ Mendoza. [A. N. S. P.].....	70.	22.2	7.2	14.5	19.2	20.8

The two small males from Sapucay and the Cordillera de Mendoza male differ from all the others of that sex in having the extreme proximal portion of the marginal field of the tegmina equally hyaline with the remainder of that field, while the other specimens have the same opaque rufous, on one side touching the humeral trunk and on the other obliquely delimited.

The Cordillera de Mendoza specimen differs from all the other specimens seen in having the margins of the collar of the pronotum more decidedly converging cephalad, the cephalic extremity being much narrower than usual in consequence. This appears, however, to be purely individual.

The species, from the basis of previous records and present material, is known to range from southern Brazil (Saussure) and central Paraguay (Sapucay) south to Uruguay (Saussure) and west to the Cordillera de Mendoza, Argentina.

**Coptopteryx claraziana** Saussure.<sup>7</sup>

1869. *C[optopteryx] claraziana* Saussure, Mittheil. Schweiz. Entom. Gesell., III, p. 66. ["*Ager argentinus*."]

Chaeras de Coria, Prov. de Mendoza. Elev. 936 meters. December 13, 1907. One male.

This specimen has the tegmina fuliginoso-hyaline, while the wings are more decidedly fuliginous. The female from Carcaraña, Argentina, previously recorded by us as *crenaticollis*,<sup>8</sup> belongs to this species.

The Chaeras de Coria specimen measures: length of body, 72 mm.;

<sup>6</sup> Imperfectly developed.

<sup>7</sup> This name was almost immediately cancelled by Saussure, who then considered the species to represent Blanchard's *crenaticollis*. This is clearly an error and the name *claraziana* is available for the species, which has been recorded by most authors as *crenaticollis*, following Saussure.

<sup>8</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 155.

length of pronotum, 19; greatest width of pronotum, 5.2; length of tegmen, 52; length of cephalic femur, 14.7.

This species, as far as can be determined from our correlation of the published records, ranges from southern Brazil (Saussure) and the Province of San Pedro, Paraguay (Giglio-Tos), south to Bahia Blanca and the north of Patagonia (Saussure), west to Mendoza Province (Chacras de Coria) and east to the Rio de la Plata (Buenos Aires; Giglio-Tos).

*Coptopteryx thoracica* n. sp.

1894.<sup>9</sup> *Coptopteryx gayi* Giglio-Tos (not of Blanchard), Boll. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 3. [Province of San Pedro, Paraguay; Santa Rosa, Salta, Argentina.]

1907. *Coptopteryx gayi* Rehn (not of Blanchard), Proc. Acad. Nat. Sci. Phila., 1907, p. 155. [Sapucay, Paraguay.]

Type: ♀; Sapucay, Paraguay. December 19, 1904. (William Foster.) [Acad. Nat. Sci. Phila., type No. 5,215.]

The differential characters of this form have been emphasized in the key.

Size large (for the genus); form less robust than in *argentina*. Head trigonal, slightly broader than deep; occiput moderately arcuate, the juxta-ocular sections subbullate and separated from the occipital margin proper by moderately deep sulci, the dorsal portion of the eyes considerably ventrad of these inflated sections; ocelli small, placed in an arcuate line; facial shield strongly transverse, the greatest depth contained about three times in the width of the same, dorsal margin obtuse-angulate, lateral margins oblique truncate; eyes moderately prominent, subovate in basal outline; antennæ short, filiform. Pronotum elongate, not strongly inflated, the greatest width contained about four times in the length; lateral margins of the collar and shaft closely and regularly spinose with nearly as regularly placed intercalated spinulations; collar having the cephalic margin strongly arcuate with the middle slightly flattened, lateral margins regularly expanding caudad to the well-rounded supracoxal dilation; shaft with the margins narrowing more abruptly caudad of the dilation than the collar expands to the same, thence caudad apparently subequal, but in reality very slightly expanding to the arcuate caudal margin, which is subtruncate mesad; transverse sulcus deep, median carina finely but decidedly indicated, present throughout the prothoracic length except for a very short distance

<sup>9</sup> It is quite probable that *Coptopteryx gayi* Giglio-Tos (*Zoolog. Jahrb.*, Abth. Syst., VIII, p. 805, 1895), listed without comment from Paraguay, is the same as the present form. In the reference given in the above text the accompanying description enables us to place the species without question, but in the *Jahrbücher* case we have no such aid.



cephalad. Tegmina broad-ovate, surface subcoriaceous as in all of the species of the genus; costal margin strongly arcuate on the proximal fourth, thence obliquely arcuato-truncate to the broad arcuate obtuse-angulate apex, sutural margin moderately arcuate; stigma hardly indicated; anal field elongate subpyriform, anal vein reaching the sutural margin about three-fourths the length of the same from the base. Wings not exceeding the tips of the tegmina. Supra-anal plate trigonal in form, lateral margins arcuato-bisinate, apex slightly acute, median carina pronounced, sublamellate distad; cerci moniliform, short; subgenital plate slightly exceeding the supra-anal plate. Cephalic limbs (for the sex) quite slender; coxæ about two-thirds as long as the cephalic femora, cephalic margin with six to seven recurved spines and numerous intercalated spinulations, caudal margin with the same character of armament, lateral margin with numerous spinulations, internal face of the coxæ with numerous scattered points; cephalic femora subequal in length to the pronotal shaft, its greatest depth contained about six times in the length, external margin armed with five spines, internal margin armed with fourteen spines, of which only the penultimate and antepenultimate are markedly smaller than the others, discoidal spines three in number; cephalic tibiæ armed on the external margin with nine spines; on the internal margin with sixteen to seventeen spines exclusive of the apical claw; cephalic metatarsi slightly longer than the remaining tarsal joints. Median and caudal limbs similar to those of other species of the genus.

General color burnt umber, washed with wood brown on the limbs, the tibiæ and tarsi distinctly bice green in tone. Tegmina with the proximal two-thirds shining clove brown, the remainder dull wax yellow, the veins reticulate with umber. Eyes clove brown.

Allotype: ♂; Sapucay, Paraguay. December 10, 1905. (William Foster.) [Acad. Nat. Sci. Phila.]

Differing from the type in those characters which are sexual in the genus, the more important differences being here given.

Size large; form elongate, slender. Ocelli large, placed in a triangle; facial shield with the dorsal margin arcuato-emarginate laterad. Pronotum with the greatest width contained four and a half times in the depth of the same; lateral margins obscurely crenulate, this more distinct on the collar than elsewhere. Tegmina slightly surpassing the apex of the abdomen, the greatest width



Fig. 4.—*Coptopteryx thoracica* n. sp. Dorsal outline of type. (Natural size.)

contained about five and a half times in the length of the same; costal margin straight for the greater portion of its length, arcuate proximad and distad, apex narrowly rounded; costal field very narrow, from about the proximal fourth gradually narrowing distad; anal field elongate pyriform, the anal vein reaching the sutural margin not quite a third the distance from the base. Wings ample, the greatest width contained slightly more than twice in the length of the same; apex rotundato-acuteangulate, separated from the peripheral margin by a distinct obtuse-angulate emargination; anterior field narrow. Supra-anal plate broadly trigonal, of similar form to that of the female; subgenital plate broad, the distal extremity of the margin with a slight obtuse-angulate emargination. Limbs similar to those of the female, but slenderer.

General color prout's brown, becoming isabelline on the cephalic limbs and greenish on the caudal ones. Tegmina strongly washed with liver brown, costal field with the veins buffy aside from the subcoriaceous portion adjacent to the humeral trunk, which is of the general tegminal color. Wings infusate with bistre, the cross veins white, greater portion of the costal margin and a small area at the base of the wing claret brown.

*Measurements.*

	Female (type).	Male (allotype).
Length of body.....	82. mm.	70. mm.
Length of pronotum.....	25.5 "	21. "
Greatest width of pronotum.....	6.5 "	4.7 "
Length of tegmen.....	12.5 "	50.5 "
Greatest width of tegmen.....	7. "	9. "
Length of cephalic femur.....	19.5 "	14. "

In addition to the type and allotype, we have before us two male and three female paratypes. The specimen referred to by us (*vide supra*) from Rio Grande do Sul, Brazil, received from Saussure and determined by him as *gayi*, is clearly referable to this species. In size the Sapuceay specimens show but little variation for this genus, while the color varies appreciably in intensity in the females and in the males to the extent noted in the paper quoted above.

**Coptopteryx gayi** (Blanchard).

1851. *Mantis Gayi* Blanchard, in Gay, Hist. Fis. Polit. de Chile, Zool., VI, p. 21, Orth. pl. 1, fig. 5. [Chile.]

1851. *Mantis crenaticollis* Blanchard, *ibid.*, p. 22. [Chile.]

Chacras de Coria, Prov. de Mendoza. Elev. 930 meters. January 5, 1908; March 6, 1908; December 6, 1907. Two males, one female.

Mendoza, Prov. de Mendoza. Elev. 767 meters. March 20, 1908; April 9 and 24, 1908. One male, two females.

Potrerrillos, Prov. de Mendoza. Elev. 1,368 meters. December 29, 1909. One female.

A careful study of Blanchard's original descriptions of the above species leaves no room for doubt but that the two names were based on opposite sexes of the same species, *gayi* on the male and *crenaticollis* on the female.

The present material agrees very fully with these descriptions and also shows that the species varies very considerably in size, the Mendoza male being very much smaller than the others of that sex.

The original measurements and those of the present series are as follows:

	Length of body. mm.	Length of pronotum. mm.	Greatest width of pronotum. mm.	Length of tegmen. mm.	Length of cephalic femur. mm.	Length of caudal femur. mm.
♂						
Original of <i>gayi</i> .....	44-48 <sup>10</sup>	.....	.....	.....	.....	.....
Mendoza.....	43.5	11.3	2.6	31.5	8.	14.
Chacras de Coria.....	52.3	14.	3.3	41.	10.5	18.2
Chacras de Coria.....	54.	14.8	3.2	40.	11.	17.7
♀						
Original of <i>crenaticollis</i>	44. <sup>11</sup>	.....	.....	.....	.....	.....
Mendoza.....	46.	13.2	4.	7.2	9.1	13.
Mendoza.....	44.7	14.	4.1	8.4	10.5	13.8
Chacras de Coria.....	49.5	15.8	4.6	9.	12.	14.1
Potrerrillos.....	54.	15.	5.	9.	12.5	16.2

The males before us agree with the original figure, although the tegmina and wings are very slightly less fuliginous. The small Mendoza male has the limbs colored exactly as in the original figure, while the other males have them more brownish, particularly the cephalic ones. The females are all of tones of brownish varying toward hoary gray brown and seal brown.

The species is known to range from Chile (specifically Santiago, *vide* Philippi) east to Buenos Aires (Saussure), south to Bahia Blanca (Saussure).

***Coopteryx constricta* n. sp.**

Type: ♀; Chacras de Coria, Province of Mendoza, Argentina. Elev. 936 meters. April 19, 1907. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,216.]

The differential characters of this very distinct species are given in the keys.

<sup>10</sup> Approximately as above—the original 22-24 lines.

<sup>11</sup> Approximately as above—the original 22 lines.

Size small (smallest in the genus); form moderately robust, abdomen broad fusiform. Head broad trigonal, the depth contained about one and one-third times in the width; occipital margin moderately arcuate, appreciably indented at the sulci, more distinctly arcuate laterad of the same; ocelli small, placed in a depressed triangle; facial shield strongly transverse, the depth contained nearly three times in the width, dorsal margin obtuse-angulate, ventral margin nearly straight, two slight median bosses present; eyes hardly prominent, well rounded; antennæ filiform, very short. Pronotum of the general form found in females of species of this genus, the width of the supracoxal expansion contained two and one-half times in the length of the pronotum; cephalic margin very slightly produced, very narrowly rounded at the extremity, margins of the collar expanding caudad to the supracoxal expansion, margins of the shaft moderately constricted, regularly concave, caudal margin arcuate laterad, subtruncate mesad, all of the lateral margins spinose, the spines of the margins of the shaft much longer than those elsewhere, distinct, more or less regular intercalated spines of minor length present on the same margins; transverse sulcus strongly impressed, shaft with a very distinct, but not high median carina. Tegmina very short, not more than half the length of the pronotum, broad ovate, costal margin strongly arcuate, apex subtruncate, sutural margin moderately arcuate; marginal field more than half the width of the remainder of the tegmen, anal field very long and narrow. Supra-anal plate transverse, trigonal, the margins laterad of the apex arcuate, apex obtuse-angulate; cerci simple, terete, not exceeding the supra-anal plate; subgenital plate compressed, rostrate. Cephalic coxæ slightly more than two-thirds the length of the pronotum, dorsal and ventral margins with numerous distinct recurved denticiform spines and intercalated spinulations, external margin with denticulate tubercles, internal face of the coxæ with numerous tubercles arranged more or less regularly in longitudinal series; cephalic femora more than five-sixths the length of the pronotum, the greatest depth of the femur slightly more than a fourth the length of the same, dorsal margin nearly straight, ventro-external margin arcuate, armed with five short robust spines, internal margin with thirteen spines more or less alternating in length, the proximal spines the longer, discoidal spines three in number; cephalic tibiæ (exclusive of apical claw) about half the length of the femur, armed on the external margin with eight spines, a considerable unarmed diastema at the base, internal margin armed with thirteen to fourteen

spines increasing in length distad; cephalic tarsi subequal in length to the cephalic tibiae with claw, metatarsus slightly exceeding the remaining tarsal joints in length. Median and caudal limbs of the usual type, but rather robust in proportion.

General color pale apple green, the abdomen pale olive green, but possibly this is due to discoloration. Head with the upper face inclined toward yellowish, eyes olive. Tegmina with the base color of the discoidal and anal fields orange-ochraceous, the veins weak olive buff, finely outlined with chestnut, the costal field and proximal portion of the discoidal and anal fields more or less uniformly deep maroon, the veins of the costal field outlined with pale salmon-buff, those of the discoidal and anal fields more olive buff. Proximal portion of the cephalic tibiae and distal portion of the cephalic femur washed with chrome yellow. Cephalic femoral and tibial spines ochre yellow tipped with seal brown.

Allotype: ♂; Chaeras de Coria, Province of Mendoza, Argentina. Elev. 936 meters. April 4, 1907. (P. Jorgensen.) [Acad. Nat. Sci. Phila.]

Size small for the genus; form moderately elongate, but more abbreviate cephalad than usual in this genus. Head slightly more transverse than in the female, the occipital outline slightly less arcuate; ocelli large, placed in a triangle; eyes more prominent. Pronotum with the greatest width more than a third of the length, general form of the pronotum similar to that of the male, but with the margins entire or faintly crenulate instead of spinose; median carina but very faintly indicated. Tegmina ample, considerably surpassing the apex of the abdomen, the greatest width contained about four times in the length of the same; hyaline, with the vicinity of the humeral trunk coriaceous; costal margin arcuate proximad and distad, straight for the remainder of the length, sutural margin

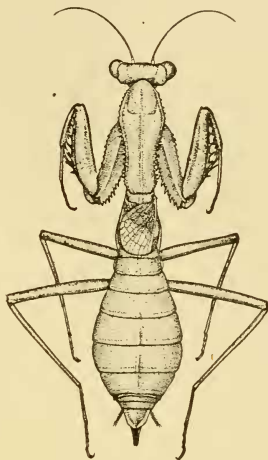


Fig. 5.—*Coptopteryx constricta* n. sp.  
Dorsal view of female (type).  
( $\times 2$ .)

strongly arcuate to the rotundato-obtuse apex, thence nearly straight to the anal field. Wing moderately broad, the greatest width contained about twice in the length, the apex well rounded; hyaline, except for a coriaceous strip along the costal margin; anterior ulnar vein biramose. Cephalic median and caudal limbs as in the opposite sex. Supra-anal plate of similar form to that of the female; cerci elongate, moniliform; subgenital plate large, moderately produced, the distal margin narrowly arcuato-emarginate.



Fig. 6.—*Copiopteryx constricta* n. sp. Dorsal outline of male (allotype). ( $\times 2$ .)

General color very pale apple green. Ocelli gamboge yellow; eyes mars brown; antennæ ochre yellow. Tegmina and wings thalassino-hyaline with the coriaceous median trunk of the former ochraceous, the costal margin of the latter greenish. Proximo-ventral abdominal segments with a broad seal brown edging mesad on the distal margin. Median and caudal tarsi clouded with olive.

#### Measurements.

	Female (type).	Male (allotype).
Length of body.....	28.5 mm.	36. mm.
Length of pronotum.....	9. "	9. "
Greatest width of pronotum.....	3.7 "	3. "
Length of tegmen.....	4.8 "	29.5 "
Length of cephalic femur.....	8. "	7.5 "
Length of caudal femur.....	8.7 "	11.9 "

In addition to the type and allotype, we have before us the following series: Chacras de Coria, March 29, 1907, one male; Mendoza, Province of Mendoza, April 11 and 20, 1908, one male, two females; La Paz, Province of Mendoza, elev. 504 meters, January 29, 1908, one male. Aside from the fact that the paratypic male is pale ochraceous in color, while all of the other specimens seen are greenish, the series presents no noteworthy differences.

#### *Miopteryx rustica* (Fabricius).

1781. [*Mantis rustica* Fabricius, Spec. Ins., I, p. 350. [Shores of Patagonia.]

Misiones. April 19 and 30, 1910, September 9, 1909. (No. 7.)  
Three males.

The present material fully agrees with Fabricius' original description, which, though brief, satisfactorily characterizes the species.

The second description given by Saussure<sup>12</sup> shows some points of difference from our material, and it is quite probable that he had another (Brazilian) species before him. Our specimens have no trace of a covering or overlapping projection of the front extending over the inferior ocellus, as described by Saussure, in fact there is no approach to a development of this sort of structure, which is so marked in *Pseudomiopteryx* and toward which Saussure considered *rustica*, as understood by him, to tend. The cephalic coxæ are very finely serrulate instead of unarmed as stated to be by Saussure.

One of our specimens is more decidedly infusate than the others, being as dark as specimens of *Pseudomiopteryx infusata*, but this is apparently individual.

\* *Paramusonia livida* (Serville).

1839. *Thespis livida* Serville, Hist. Nat. Ins. Orthopt., p. 172. [Brazil.]

Misiones. April 30 and May 3, 1910. (No. 5.) "Flies at night." Two males.

Aside from the type locality, this species has also been recorded from Sapucay, Paraguay, with material from which latter place the present individuals have been compared.

*Paramusonia seclusa* n. sp.

Type: ♂; Alto Pencosa, Province of San Luis, Argentina. Elev. 660 meters. December 20, 1908. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,213.]

This species in general size is much the same as *P. livida*, but the form of the pronotum is very slender, more as in the other species of the genus, from all of which it differs markedly in the brevity of the same portion.

Size medium (for the group), form moderately bacilliform. Head strongly transverse, the greatest depth contained about one and one-half times in the width; occipital margin arcuato-truncate between the transverse sulci, laterad of the same well rounded, hardly produced; ocelli very large, placed in a triangle; eyes very prominent, ovoid in form when seen from the side, prominent; antennæ with the joints appreciably but very gradually increasing in length distad. Pronotum with the greatest width contained about four and one-half times in the length of the same; shaft distinctly broader than the collar and both subequal in width, the margins of the collar rounded at the cephalic extremity and slightly expanded caudad to the rotundato-obtuse supracoxal expansion, caudal

<sup>12</sup> *Miss. Scient. Mex.*, Rech. Zoolog., VI, p. 277.

extremity rounded with a slight median truncation; lateral margins finely serrulate, median carina thin, decided and well elevated. Tegmina over twice the length of the pronotum, of the type found in



Fig. 7.—*Parnasonia seclusa* n. sp. Dorsal outline of pronotum of type. ( $\times 2$ .)

other species of the genus. Wings exceeding the tegmina by about the length of the collar of the pronotum, apex of similar form to that of the tegmina. Supra-anal plate elongate acute-lanceolate, considerably surpassing the subgenital plate, carinate; cerci nearly twice the length of the supra-anal plate, elongate moniliform, apex acute; subgenital plate with the distal margin well rounded, styles moderately long, well separated, simple, the space between slightly emarginate. Cephalic coxæ subequal to the length of the pronotal shaft, margins very finely serrulate; cephalic femur with the dorsal margin nearly straight, armed on the external margin with five spines, on the internal margin with thirteen spines, discoidal spines four in number; cephalic tibiæ about two-fifths the length of the femur, armed on the external margin with five spines placed on the distal section of the margin, internal margin armed with seven to nine spines; cephalic metatarsus slightly longer than the remainder of the tarsal joints and subequal to the tibiæ in length. Median and caudal limbs extremely slender, caudal metatarsus but slightly less than half of the caudal tibial length.

General color fawn color, mottled, sprinkled, clouded and washed with hair brown and seal brown. Head strongly washed with the overlying color, the line of the occiput showing up as the clear base color, ocelli tawny olive, eyes mars brown. Tegmina pale brownish hyaline, the longitudinal veins prout's brown, the adjacent portions of the short cross veins of the same color, intercalated veins and remainder of cross veins cream color.

#### Measurements.

Length of body.....	32.5 mm.
Length of pronotum.....	7.8 "
Greatest width of pronotum.....	1.5 "
Length of tegmen.....	18.5 "
Length of cephalic femur.....	6.2 "
Length of caudal femur.....	11. "

The type of this species is unique.

*Thesprotia vidua* Saussure and Zehntner.

1894. *Thesprotia vidua* Saussure and Zehntner, Biol. Cent.-Amer., Orth., I, p. 170. [South America.]

Misiones. January 3, 5 and 10, 1910; March 29, 1910; October



5, 1909; December 10, 1910. (No. 6.) "At.light" and "flying at night." Nine males, one female.

This series shows that there is a very slight amount of variation in the subhyaline character of the tegmina and wings of the male. One male has these appendages subinfumate, but between this and the other practically hyaline extreme are all intermediates. In size the male specimens agree very closely with the dimensions for that sex given by Giglio-Tos,<sup>13</sup> while the female is but a trifle under the type measurements.

The only previous definite record of the species is that from San Francisco, Bolivian Chaco (Giglio-Tos).

Subfamily VATINÆ.

\**Oxyopsis lobeter* Rehn.

1907. *Oxyopsis lobeter* Rehn, Proc. Acad. Nat. Sci. Phila., 1907, p. 159, figs. 3, 4. [Sapucay, Paraguay.]

Misiones. January 12, 1910; March 22, 1909; May 15, 1909; September 26, 1910. (Nos. 3 [♂] and 4 [♀].) Two males, two females.

This species was previously known only from the female sex. The present females are very similar to the typical specimens, the color of the tegmina being more uniform than in the type and in this respect more nearly resembling the paratype.

The male sex may be recognized by the following summary of differences from the female sex.

Allotype: ♂; Misiones, Argentina. January 12, 1910. (P. Jorgensen.) [Acad. Nat. Sci. Phila.]

Size medium (compared with the female); form moderately elongate. Head more decidedly transverse than in the female; ocelli large, placed in a triangle; facial shield similar to that of the male, but more decidedly transverse; antennæ slightly longer than the head and pronotum together. Pronotum differing from the female in such respects as found in other species of the genus, the greatest width of the supracoxal expansion contained five times in the length, the greater portion of the collar and shaft subequal in width, the moderately marked expansion well rounded; lateral margins sparsely crenulate; median carina and transverse sulcus as in the female. Tegmina slightly more than twice the length of the pronotum, apex rotundato-rectangulate, hyaline with the marginal field coriaceous. Wings surpassing the tips of the tegmina by about the length of the

<sup>13</sup> *Boll. Mus. Zool. Anat. Comp. Torino*, XII, No. 302, pp. 14, 15.

collar of the pronotum, form of the apex of the same similar to that of the female. Supra-anal plate transverse trigonal, with the immediate apex narrowly emarginate; cerci moderately elongate; subgenital plate considerably elongate, the margins converging distad, styles rather short, closely placed, depressed. Cephalic limbs in structure and armament similar to those of the female, but slenderer and with the spines of the external margin of the tibiae sometimes numbering eleven. Median and cephalic limbs similar to those of the female, but slenderer.

General coloration essentially as in the female with the following exceptions: base color more apple green than oil green; region of the occiput washed with mars brown, the eyes of the same color; tegmina hyaline with the coriaceous marginal field apple green, narrowly edged with cream color, costal margin of the wings and the apex of the same weakly washed with apple green, faintly edged with cream; pronotum ochraceous buff on the shaft (probably due to drying out); median and caudal limbs pale clay color distad passing into pale oil green.

#### Measurements.

Length of body.....	45.5 mm.
Length of pronotum.....	14. "
Greatest width of pronotum.....	2.7 "
Length of tegmen.....	32.5 "
Greatest width of tegmen.....	6.5 "
Greatest width of marginal field.....	2. "
Length of cephalic femur.....	9.8 "
Length of median femur.....	9.2 "
Length of caudal femur.....	12.5 "

#### *Parastagmatoptera unipunctata* (Burmeister).

1838. *M[antis] unipunctata* Burmeister, Handb. der Entom., II, Abth. II, pt. 1, p. 540. [Brazil.]

Buenos Aires. May, 1911. One female.

Embarcacion, Salta. April, 1911. One male.

This species has been recorded from Buenos Aires (Burmeister) in addition to the type locality, while a single female in the collection of the Academy is labelled "Paraná River." Burmeister states that this is the most abundant species of Mantis about Buenos Aires.

#### *Stagmatoptera hyaloptera* (Perty).

1830-1834. *Mantis hyaloptera* Perty, Delect. Anim. Artic., p. 117, pl. 23, fig. 6. [Amazon River.]

Jujuy, Province of Jujuy. April, 1911. One male.

Tucuman, Province of Tucuman. July, 1911. "Very common."  
One male.

This form has been recorded from San Lorenzo, Jujuy (Giglio-Tos) and Cordoba, Argentina (as the synonymous *luna*), as well as northward as far as Guiana.

**Stagmatoptera precaria** (Linnæus).

1758. [*Gryllus* (*Mantis*)] *precarius* Linnæus, Syst. Nat., Xth ed., I, p. 426.  
["America; Africa."]

Misiones. April 18, 1909. One male.

Previous Argentine records of this species are from Tucuman and Catamarca (Burmeister) and Buenos Aires (Serville). Burmeister stated that he had not taken the species south of Rosario. The same author notes that the individuals from the provinces (*i.e.*, Tucuman and Catamarca) average two to two and one-half inches in length, while tropical Brazilian individuals are three to three and one-half in length. The present specimen shows the following measurements: length of body, 72 mm.; length of pronotum, 24; greatest width of pronotum 5; length of tegmen, 53; greatest width of tegmen, 14.5; width of marginal field, 4; length of cephalic femur, 16.

**Zoolea lobipes** (Olivier).

1792. *Mantis lobipes* Olivier, Encycl. Méth., Ins., VII, p. 637. ["Tranquebar; coast of Coromandel."]

Misiones. December, 1908. One male.

This genus and species was previously known from Argentina only by a single record from San Lorenzo, Jujuy (Giglio-Tos). The published records show the range to extend from the Guianas west to Peru and south to the northern edge of the Argentine Republic.

\***Phyllovates iheringi** (Saussure and Zehntner).

1894. *Theoclytes iheringi* Saussure and Zehntner, Biol. Cent.-Amer., Orth., I, p. 193. [Rio Grande do Sul, Brazil.]

Misiones. November 24, 1909; November, 1910. (No. 8.)  
Two females.

This species was previously known only from the original reference. Giglio-Tos<sup>14</sup> has recorded the allied *P. parallela*, under the synonymic name *Theoclytes surinamensis*, from Buenos Aires.

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<sup>14</sup> *Boll. Mus. Zool. Anat. Comp. Torino*, IX, No. 184, p. 4.

## Family PHASMIDÆ.

## Subfamily PYGIRHYNCHINÆ.

\**Canuleius*<sup>15</sup> *inermis* Redtenbacher.

1906. *C[anuleius] inermis* Redtenbacher, Die Insekt. Fam. Phasmiden, p. 68, pl. II, figs. 1, 2. [Theresopolis and Espirito Santo, Brazil.]

Misiones. November 2, 1910. One female.

This specimen is considerably damaged, so that the characters of the caudal limbs cannot be verified.

## Subfamily ANISOMORPHINÆ.

*Agathemera millepunctata* Redtenbacher.

1906. *A[agathemera] millepunctata* Redtenbacher, *ibid.*, p. 89. [Carmen de Patagones, Prov. of Buenos Aires, Argentina.]

La Paz, Prov. of Mendoza. Elev. 504 meters. December 15, 1908. One female.

This specimen is slightly smaller than the original measurements, but otherwise it agrees fully. The species is very distinct from *A. crassa*, with material of which from Cruz del Eje, Prov. of Cordoba, the present specimen has been compared.

\**Anisomorpha dentata* Stål.

1875. *A[nisomorpha] dentata* Stål, Recens. Orthopt., III, p. 95. [Santa Catharina, Brazil.]

Misiones. January 3, 1910; November 2, 1910. Two females.

These specimens are somewhat smaller than the measurements given by Stål and Redtenbacher, but are otherwise quite typical of the species. This is the first record of the species from Argentina, the previous ones, in addition to the type locality, being Matto Grosso, Brazil, Paraguay and Santa Cruz de la Sierra, Bolivia.

## Subfamily PSEUDOPHASMINEÆ.

\**Paraphasma marginale* Redtenbacher.

1906. *P[araphasma] marginale* Redtenbacher, Die Insekt. Fam. Phasmiden, p. 115. [Santos, Minas Geraes, Rio de Janeiro, Goyaz, Brazil; Paraguay.]

Misiones. January 5, 1911; December 5, 1909. (No. 9.) One male, one female.

These specimens agree very well with the description of the species, which is the same as that recorded by the author from Sapucay, Paraguay, as *Olecyphides fasciatus* (female) and *O. hopii* (male).<sup>16</sup>

<sup>15</sup> The individual from Sapucay, Paraguay, recorded by us (*Proc. Acad. Nat. Sci. Phila.*, 1907, p. 161) as *Ceroys coronatus* (Thunberg) belongs to the genus *Canuleius*, and we tentatively refer it to *C. similis* Redtenbacher (*ibid.*, p. 68), a very closely related form described from Theresopolis, Brazil.

<sup>16</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 165.

Redtenbacher considered *marginale* a close ally to the congeneric *fasciatum*, from which it was separated by the lineate femora. Gray's *Pasma hopii* was unknown to him and accordingly placed doubtfully under the genus *Stratocles*. The original description of *fasciatum* gives us no clue to the color of the femora. The presence or absence of the lateral thoracic line of yellowish, the slightly annulate antennæ and the differences in the tegminal protuberance used by us to separate the Sapucay material into *hopii* and *fasciatum* have been shown by Redtenbacher to be individual in character.

The localities given in the original description, with Sapucay, Paraguay, are all that were previously known.

Subfamily CLITUMNINÆ.

\**Steleoxiphus catastates* Rehn.

1907. *Steleoxiphus catastates* Rehn, Proc. Acad. Nat. Sci. Phila., 1907, p. 163, figs. 5, 6. [Sapucay, Paraguay.]

Misiones. January 29, 1911; March 13, 1909; December 14, 1910. (Nos. 1, 2 and 8.) Two adult females, one immature male, one immature female.

The immature male shows conclusively that this genus is not the opposite (female) sex of *Paraleptynia* Caudell, which was suggested as a possibility in the original description of *Steleoxiphus*. The character of the antennæ, form of the head and proportions show the two to be generically distinct, and in these respects the two sexes are very similar. The immature male and female, both taken on December 14th, are similar in size, being somewhat more than half the length of the adults.

The anal segment of the male is compressed, carinate dorsad, more strongly so distad, the distal margin obtuse-angulate emarginate; supra-anal plate very minute, trigonal; cerci more than half the length of the anal segment, crassate, subcylindrical, apex subacute; subgenital plate hardly reaching the apex of the anal segment, apex narrowly rotundato-subtuberculate. The immature female has the subgenital operculum but slightly shorter proportionately than it is in the adult.

XIPHOPHASMA<sup>17</sup> n. gen.

A member of the Clitumninæ and related to *Steleoxiphus* Rehn and *Paraleptynia* and *Ceratiscus* Caudell. From *Steleoxiphus* it can readily be separated by the bispinose and broader head, the more abbreviate metatarsi and the depressed and abbreviate antennæ;

<sup>17</sup> From *ξίφος*, sword, and *Pasma*.

from *Paraleptynia* and *Ceraticiscus* the new genus differs in the spinose head, also from the former in the more abbreviate antennæ and from the latter in the narrower head, more abbreviate metatarsi and non-lobate limbs.

Head bispinose; greatest width of the head less than the length of the same; antennæ short, composed of fifteen joints, the proximal longer than broad, the next subquadrate, the third subequal to the first in length, the fourth transverse, the remainder longitudinal and tapering, the fifth and sixth less longitudinal than the succeeding ones, all depressed. Median segment longitudinal, subequal to the head in length. Cerci of female terete; subgenital plate of female greatly elongate, lanceolate, compressed. Limbs non-lobate; tarsi abbreviate, in no case a fourth the tibial length; metatarsi of the cephalic limbs slightly more than half the length of the tarsi, of the other limbs a half or less than a half the length of the same.

Type: *X. missionum* n. sp.

*Xiphophasma missionum* n. sp.

Type: ♀; Misiones, Argentina. December 18, 1910. (No. 7.) (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,214.]

Size large; form very elongate. Head with the greatest width contained one and one-half times in the length of the same; paired horns placed between the caudal portions of the eyes, slightly divergent and inclined slightly cephalad; eyes not at all prominent, in fact slightly recessed, in outline nearly circular; antennæ as described under the genus, their length about equal to that of the head and half of the pronotum; occipital margin with three moderately distinct indentations, the whole head narrowing caudad. Pronotum with its length subequal



Fig. 8.—*Xiphophasma missionum* n. gen. and sp. Lateral outline of head of type. (×2.)

to that of the head caudad of the eyes, longitudinal, the median width very slightly greater than half of the length; the lateral margins sinuate dorsad of the insertion of the coxæ. Mesonotum about five and a half times the pronotal length, subequal in width in the greater portion of its length, faint traces of a median carina present. Metanotum (including median segment) nearly four-fifths the mesonotal length, similar in structure to the mesonotum; medium segment not separated from the metanotum proper by a transverse sulcus. Abdomen with segments one to seven longitudinal, progressively increasing in length distad, eighth segment longitudinal, but little

more than half the length of the seventh segment, ninth segment distinctly longitudinal, slightly longer than the eighth segment, carinate, distal margin rectangulate-emarginate mesad, rounded laterad; supra-anal plate rectangulate, merely the apex extending caudad of the ninth segment; cerci acute, terete, not a third the length of the ninth dorsal segment; subgenital plate enormously elongate, the length equal to that of the five proximal abdominal segments, of this length two-thirds is distad of the real apex of the abdomen, V-shaped in section, compressed, acute, carinate ventrad. Cephalic femur longer than the pro- and mesonotum together, proximal flexure pronounced, carina subcristate; cephalic tibiæ slightly exceeding the femora, slender, moderately compressed; cephalic metatarsi slightly longer than the remainder of the tarsal joints. Median femora very slightly shorter than the mesonotum; median tibiæ very slightly longer than the femora; metatarsi slightly

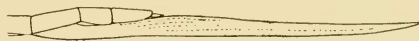


Fig. 9.—*Xiphopasma missionum* n. gen. and sp. Lateral outline of apex of abdomen of type. ( $\times 1\frac{1}{2}$ .)

shorter than the remainder of the tarsal joints. Caudal femora reaching to the distal margin of the fourth abdominal segment; caudal tibiæ hardly longer than the femora; caudal metatarsi very slightly longer than the remainder of the tarsus.

General color burnt umber, the head, pronotum, cephalic half of the mesonotum, apex of the abdomen and the limbs dusted more or less thickly with hoary white; antennæ seal brown; eyes tawny olive.

#### Measurements.

Length of body.....	118.	mm.
Length of head.....	7.8	"
Length of pronotum.....	4.8	"
Length of mesonotum.....	27.	"
Length of metanotum (including median segment).....	21.5	"
Length of cephalic femur.....	35.5	"
Length of median femur.....	26.3	"
Length of caudal femur.....	30.5	"
Length of subgenital plate.....	41.5	"

The type of this very interesting genus and species is unique.

Family **ACRIDIDÆ**.Subfamily **ACRYDIINÆ**.**Prototettix lobulatus** (Stål).

1860. *Tetrix lobulata* Stål, Kong. Svenska Freg. Eugenies Resa, Zool., I, p. 347. [Rio Janeiro, Brazil.]

Misiones. April 5 and May 20, 1910. (No. 23.) One male, one female.

Embarcacion, Prov. of Salta. April, 1911. One male.

The present species has been recorded by Bolivar from Argentina without definite locality.

\***Apotettix bruneri** Hancock.

1906. *Apotettix bruneri* Hancock, in Bruner, Proc. U. S. Nat. Mus., XXX, p. 614. [Paraguay.]

Embarcacion, Prov. of Salta. April, 1911. One male.

The only other exact record is of the occurrence of the species at Puerto Bertoni, Paraguay (Rehn), with the female from which place the present specimen has been compared.

**Tettigidea paratecta** n. sp.

Type: ♀; Misiones, Argentina. February 1, 1911. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,217.]

Belonging to the section of the genus including *chichimeca* Saussure, *tecta* Morse, *annulipes* Bruner and *scudleri* Bolivar. From *chichimeca* and *scudleri* the present form can be readily distinguished by the tectate dorsum, *scudleri* also having the femora narrower; from *annulipes* the new form can be separated by the non-glabrous surface and the blunter and much less produced vertex, no approach being found to the type of *T. prorsa*, the vertex of which that of *annulipes* is said to greatly resemble. From *tecta*, its closest ally, *paratecta* can be separated by the more elevated and arcuate median carina of the pronotum, the more regularly angulate cephalic margin of the same, the less decidedly lineato-rugulose dorsum of the pronotum, the less projecting vertex, the less thickened margins of the frontal costa, the more lanceolate tegmina and more finely sculptured pagina of the caudal femora.

Size medium (for the genus); form robust; surface rather evenly chagrinous. Head with the greatest width contained about one and one-third times in the depth of the same; fastigium with the carina regularly arcuate when seen from above, obsolete immediately laterad of the median carina, width of the fastigium subequal to that of one of the eyes; median carina of the fastigium prominent, projecting moderately cephalad of the lateral carina of the fastigium, when viewed from the side strongly arcuate and passing into the



facial outline, which is arcuate with a slight sinuosity at the ocellus; facial forks moderately separated, hardly diverging ventrad; eyes considerably shorter than the depth of the infra-ocular portion of the genæ, trigono-reniform in basal outline, moderately prominent when seen from the dorsum. Pronotum tectate in section, the median carina well elevated, in longitudinal section regularly arcuate with the very faintest interhumeral flattening; cephalic margin of the pronotum almost rectangulate, the immediate angle very fine, reaching to the base of the fastigial carina of the vertex; humeral angles not at all prominent, rounded very broad obtuse-angulate; apex reaching

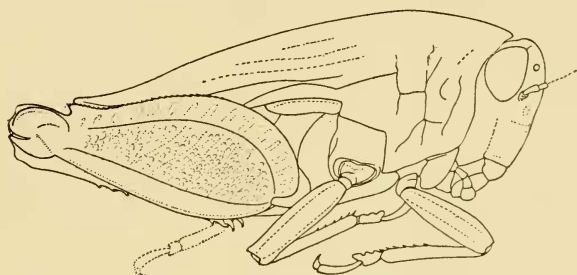


Fig. 10.—*Tettigidea paratecta* n. sp. Lateral outline of type. (× 8.)

to the base of the genicular arches of the caudal femora, in general form acute, the immediate apex blunted, slightly subulate; surface of the dorsum with a number of very weak longitudinal lines, these most numerous in the humeral region and all slightly latero-caudal in general trend; lateral lobes with the greatest dorsal length slightly greater than the greatest depth, with several glabrous areas dorsad, caudal margin oblique-truncate, ventro-caudal angle acute, humeral sinus very slight, rectangulate. Tegmina very small, in length not exceeding that of the ventral margin of the lateral lobes of the pronotum, elongate-lanceolate, the greatest exposed width contained nearly four times in the length of the same, apex very narrowly rounded. Cephalic and median limbs not at all lobate. Caudal femora nearly equal to three-fourths of the length of the pronotum, robust, moderately inflated, the greatest width contained slightly more than twice in the length of the same, pagina very finely sculptured; caudal tibiæ moderately robust, slightly expanded distad.

General color seal brown with the dorsum largely

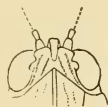


Fig. 11.—*Tettigidea paratecta* n. sp. Dorsal view of head and cephalic margin of the pronotum. (× 8.)

fawn color and the venter pale ochraceous. The pale dorsal color is clouded with the general color except for a clear section cephalad on the pronotum and a reversed V-shaped section which has its apex on the median carina between the shoulders, extending laterad over the dorsum of the pronotum and the dorsal and lateral faces of the caudal femora; median carina of the pronotum beaded with about seven regularly placed areas of the dark general color. Median and cephalic limbs with more or less complete annuli of the dark general color on pale ochraceous. Eyes mars brown.

*Measurements.*

Length of body.....	9.6 mm.
Length of pronotum.....	9. " "
Greatest dorsal width of pronotum.....	3. " "
Length of tegmen.....	1.7 " "
Length of caudal femur.....	6.5 " "

The type of this species is unique.

\**Tettigidea arcuata* Bruner.

1910. *Tettigidea arcuata* Bruner, Annals Carneg. Mus., VII, p. 135.  
[Chapada, Brazil.]

Misiones. July 7, 1910. (No. 23.) Male and female "in copula."

These specimens are typical of the form, which was taken at Chapada in April, May, and June.

*Tettigidea multicoostata* Bolivar.

1887. *T[ettigidea] multicoostata* Bolivar, Ann. Soc. Entom. Belg., XXXI,  
p. 299. [Brazil.]

Misiones. April 4, 1910. One male.

We have before us individuals from Caiza, Bolivian Chaco, Salta and Tucuman, Argentina, and Sapucay, Paraguay, with which the Misiones specimens have been compared.

The species is now known to range from Brazil (specifically Corumbá [Bruner]) and the Bolivian Chaco (Caiza and San Francisco [Giglio-Tos]), south to Tucuman [Bruner] and across Paraguay to the Misiones territory.

Subfamily PROSCOPINÆ.

*Tetanorhynchus borellii* Giglio-Tos.

1897. *T[etanorhynchus] borellii* Giglio-Tos, Boll. Mus. Zool. Anat. Comp., Torino, XII, No. 302, p. 18. [Caiza and San Francisco, Bolivian Chaco; San Lorenzo, Jujuy, Argentina.]

Embarcacion, Prov. of Salta. April, 1911. Two males, one female.

Jujuy, Prov. Jujuy. April, 1911. Two females.

The above-listed specimens have been compared with a pair of cotypes in the collection of the Academy, received from Dr. Borelli, taken at Caiza and San Lorenzo, and found to be inseparable. One Jujuy female undoubtedly had an injury to the rostrum which retarded the development of the characteristic clavate expansion of the same, although the almost equally characteristic cruciform section of that portion is decided.

The original localities and those given above are all we know for the species.

**Cephalocema costulata** Burmeister.

1880. *Cephalocema costulata* Burmeister, Abhandl. Naturforsch. Gesell., Halle, XV, heft I, p. 9, pl. 1, figs. 5-7. [Argentina.]

Misiones. October 18, 1909; December 12-18, 1909; January 24, 1910; March 12-18, 1909; March 24, 1910; April 4-5, 1910. (Nos. 3, 4 and 5.) Three adult males, ten adult females, one immature female.

These specimens average slightly larger than individuals from Cordoba and Carcaraña, Argentina, but smaller than Sapucay, Paraguay, representatives. The number of spines on the dorso-lateral margin of the caudal tibiae is very unreliable as a diagnostic character, as an examination of the present series, which unquestionably represents but a single species, shows the number to range from eight to twenty, while in a single specimen the disparity in the number of spines on these margins of the two tibiae is as much as four (eight and twelve).

This species is found over a considerable area, having been recorded from as far north as Matto Grosso, Brazil (Bruner), and Aguiarenda, Bolivian Chaco (Giglio-Tos), south to the Rio Colorado (Bruner), east to Montevideo, Uruguay (Brunner), west to Tucuman, Argentina (Giglio-Tos).

**Cephalocema lineata** Brunner.

1890. *Cephalocema lineata* Brunner, Verhandl. K.-K. Zoolog.-botan. Gesell., Wien, XL, p. 118, pl. V, fig. 11. [Mendoza, Argentina.]

Mendoza, Prov. of Mendoza. Elev. 767 meters. February 5, 1909. One male.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. February 24, 1908. One female.

Potrerrillos, Prov. of Mendoza. Elev. 1,368 meters. February 20, 1908. Two females.

This constitutes the second report of the occurrence of this very remarkable species. As a male was previously unknown, a few notes on the points of difference from the female may be of interest.

Size rather large; form extreme elongate. Proportions of the head essentially as in the female; eyes more prominent. Pronotum much slenderer than in the female, the portion cephalad of the insertion of the cephalic limbs narrower than the portion caudad of the same, expansion at the cephalic margin very decided as well as that at the insertion of the limbs. Dorsum of the pronotum, mesonotum and metanotum more or less distinctly tricarinate mesad, the carinae being closely placed, traces of the same present in the female. Supra-anal plate short, lanceolate, apex acute; cerci extremely short, simple; subgenital plate elongate-lanceolate, subequal in length to that portion of the pronotum caudad of the insertion of the limbs, strongly compressed, acute. Limbs very slender, the median and cephalic almost filiform, the caudal femora almost imperceptibly inflated.

*Measurements.*

Length of body.....	103.	mm.
Dorsal length of head.....	25.	“
Length of pronotum.....	23.	“
Width of pronotum at the insertion of limbs.....	2.	“
Length of mesonotum and metanotum.....	6.2	“
Length of cephalic femur.....	22.	“
Length of median femur.....	21.5	“
Length of caudal femur.....	35.	“
Length of subgenital plate.....	11.	“

***Astroma compactum* Brunner.**

1891. *Astroma compactum* Brunner, Verhandl. K.-K. Zoolog.-botan. Gesell., Wien, XL, p. 120, pl. V, figs. 12a-b. [Mendoza, Argentina; Santiago, Chile.]

Alto Pencoza, Prov. of San Luis. Elev. 660 meters. February 2, 1908; December 22, 1908. One male, one immature female.

La Paz, Prov. of Mendoza. Elev. 504 meters. January 29, 1908. One female.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. March 18, 1907; December 6, 1907; January 15, 1908; February 4-11, 1908; March 6, 1908. One male, six females, two immature females.

Mendoza, Prov. of Mendoza. Elev. 767 meters. November 10-15, 1907; December 13-18, 1907; January 5, 1908; March 27-29, 1908; April 12 and 24, 1908; May 7 and 13, 1908; June 5-18, 1908. Ten males, nineteen females, six immature individuals of both sexes.

Blanco Encalada, Prov. of Mendoza. Elev. 1,068 meters. February 16, 1908. One female.

San Ignacio, Prov. of Mendoza. Elev. 1,235 meters. March 15 and 22, 1908; April 5, 1908. Four males, two females.

This very extensive series is of considerable interest, demonstrating as it does that the species is undoubtedly common within its range and that considerable variation in size and sculpture occurs.

The size extremes of the series are: length of body, ♂ 36.7-45.5 mm., ♀ 63.5-82.5; length of head, ♂ 5.3-6.7, ♀ 8.5-10; length of rostrum, ♂ 1.2-1.5, ♀ 2.5-3.8; length of pronotum, ♂ 7.2-9.8, ♀ 11.2-13.8; length of tegmen, ♀ 2.5-2.7; length of cephalic femur, ♂ 7.1-9, ♀ 9.3-12.6; length of caudal femur, ♂ 14.8-18, ♀ 20.8-27.5. Both extremes of the male sex are from Mendoza, the minimum of the female sex from Blanco Encalada and the maximum from Chacras de Coria.

The wings of the female vary in the shape of the exposed coriaceous portion, this ranging from broad ovate to elongate elliptical, the size variation of the same being considerable and in no way correlated with the general size. The rostrum exhibits a very appreciable amount of variation in the female, ranging from a length hardly greater than that of the eye to one and one-half times the length of the same. The spiniform tubercles on the cephalic and caudal margins of the pronotum and the spiniform lobes of the mesonotum vary considerably in prominence, the latter also in the degree of their erection, being vertical in some and decidedly inclined caudad in other individuals. The linear rugosities of the body show some variation in prominence which does not appear to be correlated with the development of the tubercles and lobes.

The only evidence of geographic variation seen in the series is that noticed in the slenderer pronotum of the male and immature female from Alto Pencosa, a locality somewhat removed from those at which the other specimens were taken.

The color varies from dull brown through gray-browns to hoary white, but how much of the brownish coloration is due to discoloration cannot be determined. Some individuals are partially blackish, but this is unquestionably due to discoloration, as the specimens were not eviscerated.

The following diagnosis shows the features in which the previously undescribed male differs from the female.

Size small; form more elongate than in the other sex; surface much smoother than in the female. Head with its dorsal length two-thirds that of the pronotum, considerably constricted caudad of the eyes, the whole head considerably elevated cephalo-dorsad; fastigium

horizontal, much shorter than in the female, hardly more than half the length of the eye, apex very blunt; eyes very prominent, ovate in outline, their length more than half that of the proximal portion of the dorsum of the head; antennæ slightly longer than the eye, five-jointed. Pronotum subcylindrical, subequal in width except for the expansion at the cephalic margin and the insertion of the cephalic limbs, the former margin truncate mesad with a pair of low flanking tubercles and obliquely truncate laterad; width at the insertion of the cephalic limbs contained two and one-half times in the length of the pronotum, caudal margin non-tuberculate; surface of the dorsum without the prominent ridges found in the female. No tegmina or wings present. Caudal margin of the mesonotum non-tuberculate. Abdomen with the medio-longitudinal carina indicated only caudad; supra-anal plate sublanceolate, apex well rounded, a prominent medio-longitudinal sulcus present on the proximal two-thirds; cerci simple, styliform, short, blunt; subgenital plate moderately rostrate, subacute, carinate ventrad, dorsal face of the apex flattened, sulcate, the apical margin slightly cleft. Limbs slightly more robust than in the female; caudal femora slightly more bullate, the tips of the femora reaching to the distal margin of the sixth abdominal segment.

*Measurements.*

Length of body.....	40. mm.
Length of pronotum.....	8.3 "
Greatest width of the pronotum at the insertion of the cephalic limbs.....	3. "
Length of remaining thoracic segments.....	6. "
Length of cephalic femur.....	7.3 "
Length of median femur.....	7. "
Length of caudal femur.....	15.5 "

The only information with the specimens on the habits of the species is on several Mendoza individuals labelled "On *Larrea*." This is apparently *Covillea* (*Larrea* of authors) *divaricata*, a shrub which Mr. Jorgensen tells us constitutes an important part of the vegetation of the Mendoza region. It is probable that the insect spends a considerable part of its life on the twigs of the bush, which it simulates very well and where it would be well protected. This proclivity is found in certain species of Orthoptera occurring on the allied *C. tridentata* of the Lower Sonoran deserts of North America.

Nine of the pairs in the series were taken "in copula." The earliest seasonal date that is represented by adults is November 15,

a single male from Mendoza bearing that date, the latest June 18, while the first date for a pair in copula is March 6.

\* *Astroma foliatum* Brunner.

1890. *Astroma foliatum* Brunner, Verhandl. K.-K. Zoolog.-botan. Gesell., Wien, XL., p. 121, pl. V, fig. 12c<sup>18</sup> [Arannias, Chile.]

La Paz, Prov. of Mendoza. Elev. 504 meters. January 29, 1908; December 15, 1908. One male, two females.

Alto Pencosa, Prov. of San Luis. Elev. 660 meters. December 22, 1908. One nearly adult female.

The present specimens are referred to this species with some uncertainty, as certain points of difference from the original description are evident, although how much weight to allow these differences is a matter of question, as series of the allied *A. chloropterum* and *compactum* show considerable variation in size and sculpture.

Brunner knew only the female of the species, and his type specimen was considerably smaller than either of the adult females before us, although larger than the immature one. This size difference is, however, about equalled in our series of *compactum*.

Brunner used the serrulate or smooth condition of the margins of the ovipositor jaws as one of the major division characters for the species of the genus, placing *chloropterum* and *compactum* in the serrulate section and *granulosum* and *foliatum* in the other. As a matter of fact, *chloropterum* is very similar to *foliatum* in having very weak serrulations on the margins of the dorsal valves, while *compactum* has the serrulations very decided. Aside from size, the description of *foliatum*, based on the female sex, agrees with that sex of the present series in all the characters except the number of spines on the margins of the caudal tibiæ and in the character of the caudal margin of the pronotum. The number of spines is unimportant, as a count shows they run from nine to twelve on the external margin (Brunner gives thirteen) and from nine to eleven on the internal (Brunner gives eleven). One specimen has nine on each of the margins and another has a difference of two spines on the same margins of the two tibiæ. The pronotum is described as "margine antico et postico in lobos binos foliatos, obtusos productis," and in the present material these margins are strongly bispinose, but hardly developed in foliate lobes.

<sup>18</sup> Given in error as "Fig. 12B" in the text, but the explanation to the plates shows that "B" refers to *compactum* and "C" to *foliatum*.

The measurements of the present specimens are as follows:

	Male. La Paz. mm.	Female. La Paz. mm.	Female. Imm. La Paz. mm.	Female. Alto Pencosa. mm.
Length of body.....	60.	101.	93.	67.
Length of head.....	10.8	19.	15.5	12.2
Length of rostrum.....	5.8	11.8	8.2	6.2
Length of pronotum.....	12.5	20.7	19.5	13.2
Length of tegmen.....		4.	3.5	2.
Length of cephalic femur.....	10.5	14.3	13.	9.
Length of caudal femur.....	20.5	32.5	30.	19.2

As the male has not been previously reported, the differential characters of that sex may be of service.<sup>19</sup>

Size rather small; form very elongate. Head very similar to that of the female, but the eyes are more prominent and the depth of the head caudad of the eyes is subequal for a greater distance and not regularly increasing in depth as in the female. Pronotum with the greatest (supra-coxal) width contained about five times in the length of the same; cephalic margin with two low nodes instead of high spiniform tubercles; caudal margin unarmed; no lateral carinae present as in the other sex; the general form of the pronotum more subequal in width and not gradually enlarging caudad as in the female. No trace of tegmina and wings. Narrowest portions of the mesonotum and metanotum subequal in width to the pronotum; mesonotum with no spines on the margin. Abdomen not multicarinate, a single median carina indicated; supra-anal plate lanceolate, the apex not rounded, surface slightly excavate, not sulcate; cerci simple, tapering, very short, blunt; subgenital plate greatly produced, rostrate, subdeplanate, dorsal surface sulcate, apical margin strongly divided, hardly carinate ventrad. Limbs slenderer than in the female; caudal femora reaching to the caudal margin of the fifth abdominal segment.

#### Subfamily ACRIDINÆ.

\**Hyalopteryx rufipennis* Charpentier.

1845. *Hyalopteryx rufipennis* Charpentier, Orthopt. Desc. et Depict., tab. 46. [Brazil.]

Misiones. January 1, 1910; January 3, 1909; December 10-12, 1909; December 12, 1910. (No. 13.) Nine males, two females.

These specimens are quite uniform in color and when compared

<sup>19</sup> The data here given are from the La Paz male measured above, this being the allotype of the species.



with the allied *asinus* Rehn and *specularis* Bruner are found to be quite distinct. The males show some variation in size, the extremes of tegminal length being twenty-eight and thirty millimeters.

The information with several specimens taken December 12, 1909, and 1910 is to the effect that the species was "very common in the Campo."

Bruner has recently recorded a single female specimen of this species from Chapada, Matto Grosso, Brazil, but otherwise it has not been correctly recorded since the original description. The present author recorded specimens of the then undescribed *specularis* as this species, but later corrected his error.

**Eutryxalis gracilis** (Giglio-Tos).

1897. *Hyalopteryx* *gracilis* Giglio-Tos, Boll. Mus. Anat. Comp., Torino, XII, No. 302, p. 22. [San Lorenzo, Jujuy, Argentina; Caiza, Bolivian Chaco.]

Misiones. January 11; December 14, 1910. (No. 24.) Two males, two females.

Buenos Aires. February 20, 1909; May 1, 1907. Four females.

One female has the dorsal aspect purplish, similar to an individual of the same sex from Carcaraña, Argentina.

The species has been recorded from as far north as Caiza, Bolivian Chaco, and Sapucay, Paraguay, south to the Rio Colorado, west to Jujuy, Argentina, east to the Rio de la Plata and the Misiones.

**Truxalis brevicornis** (Johannson).

1764. *Gryllus brevicornis* Johannson, Amcen. Acad., VI, p. 398. [North America (Pennsylvania<sup>20</sup>).]

Misiones. February 20, 1909; April 20, 1909. Two males.

Buenos Aires. February 14-26, 1909; March 7, 1909. Five females.

A widely distributed American species found as far south as the Rio Colorado of Argentina.

**Orphula pagana** (Stål).

1860. *Gomphoceris* (*Hyalopteryx*) *paganus* Stål, Kong. Svenska Freg. Eugenies Resa, Zool., I, Ins., p. 339. [Rio Janeiro, Brazil.]

Misiones. March 27, 1909; April 30, 1910; May 5-6, 1910; December 12, 1910. (Nos. 7 and 8.) Ten males, eight females.

This interesting series has been compared with thirteen other individuals of the genus from localities in Brazil and Paraguay. It is evident that considerable individual variation in several charac-

<sup>20</sup> The original material was credited to DeGeer, and he subsequently says (*Mem. Ins.*, III, p. 499) he received the species from Pennsylvania, sent by Acrelius.

ters is present in the species, while it also passes into the following form which is merely a geographic race.

The size varies considerably, even in series from the same locality, while the coloration is modified by the variable intensity of the blackish or brownish postocular bars which margin the lateral carinae ventrad. The dorsum of the head and pronotum is either uniform in color or supplied with a pair of narrow velvety black lines, which diverge caudad and margin the lateral carinae on their internal edge. These lines are variable in intensity and also in continuity, those on the head sometimes being parallel and again regularly divergent and continuous with their pronotal section. Several individuals from the Misiones and São Paulo, Brazil, are more or less completely sprinkled with fine blackish-brown punctations, in this respect resembling similarly colored individuals of *Chlaenius conspersa* and *Psolæssa texana*.

The lateral carinae of the pronotum are variable in character, in some individuals being decidedly discontinuous at the transverse sulcus and continuous in others. In the latter specimens the carinae are slightly but regularly divergent through their entire length, while in the other type they are more or less decidedly offset laterad at the sulcus, subparallel on the prozona and slightly divergent or (more frequently) subparallel on the metazona. These two types have no geographic significance, cannot be correlated with size, and in color only that all of the continuous type have the supplementary dorsal lines of black. Some individuals are almost intermediate in the character of the carinae, and similar variation is found in *O. pagana minor*.

The typical form of the species ranges from Rio Janeiro, Brazil west to at least Formosa, Argentina, extending south only as far as Resistencia Chaco and Misiones, Argentina, northward and westward apparently grading into *O. p. minor*, specimens from Chapada and Corumbá, Matto Grosso, Brazil, being nearer cotypes of Giglio-Tos' form.

***Orphula pagana minor* (Giglio-Tos).**

1897. *M[etaleptea] minor* Giglio-Tos, Boll. Mus. Zool. Anat. Comp., Torino, XII, No. 302, p. 23. [San Lorenzo, Jujuy, Argentina; Caiza and Aguai-randa, Bolivian Chaco.]

Jujuy, Prov. of Jujuy. April, 1911. One male.

After careful study of all available material, we are able to amplify our previous comments on this form<sup>21</sup> and demonstrate that it is but

<sup>21</sup> *Proc. Acad. Nat. Sci. Phila.*, 1906, p. 17.

a geographic race of *pagana*. The Jujuy male fully agrees with the cotypic material, and typical individuals of the two forms can be separated by the following features:

- A.—Form more robust; tegmina broader, less elongate; head broader, eyes prominent, shorter, fastigium broad.....*O. pagana*.  
 AA.—Form slenderer; tegmina more elongate, narrower; head narrower, eyes less prominent, longer, fastigium narrow, more elongate.....*O. pagana minor*.

This race is probably restricted in its typical form to the Bolivian Chaco and the adjacent portions of Argentina (Jujuy). Material from Chapada and Corumbá, Matto Grosso, Brazil, is rather intermediate between the present subspecies and true *pagana*, but somewhat closer to *minor*.

\* *Amblytropidia robusta* Bruner.

1906. *Amblytropidia robusta* Bruner, Proc. U. S. Nat. Mus., XXX, p. 631. [Sapucay, Paraguay.]

Misiones. April 5 and 23, 1910; May 5, 1910. One male, three females.

These individuals are inseparable from Sapucay specimens. One female has the dorsum washed with dull green, as mentioned by Bruner.

The species is only known from the type locality, Puerto Bertoni, Paraguay, and the Misiones.

*Sinipta dalmani* Stål.

1860. *Gomphocerus (Sinipta) Dalmani* Stål, Kong. Svenska Fregatt. Eugenies Resa, Zool., I, Ins., p. 340. [Montevideo, Uruguay.]

Alto Pencosa, Province of San Luis. Elev. 660 meters. December 20-22, 1908. Seven males, one female.

These specimens have been compared with two pairs in the Academy collection from Carcaraña, Argentina, collected by Bruner. The female of the present series is the only one of the dozen now before us which does not possess supplementary pronotal carinæ. The coloration of this individual is essentially the same as the other two of that sex, but there is no trace of the carinæ. Doubtless this genus is similar in this respect to *Eritettix*, which has the supplementary carinæ present or absent in the same species from the same locality.<sup>22</sup>

The localities from which this species has been recorded are Cordoba, Carcaraña, and Alto Pencosa, Argentina; Sapucay, Paraguay, and Montevideo, Uruguay.

<sup>22</sup> Vide Rehn and Hebard, Proc. Acad. Nat. Sci. Phila., 1910, p. 625.

**Parorphula pallidinota** Bruner.

1900. *Parorphula pallidinota* Bruner, Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires, p. 26. [Carcaraña, Argentina.]

Caucete, Prov. of San Juan. Elev. 567 meters. January 13, 1909. One male, two females.

Beunos Aires. May 3, 1907. One female.

This species has previously been recorded only from Carcaraña. There is considerable variation in coloration, several shades of yellowish brown and pale brown being the dorsal color, this distinctly paler than the lateral color in all but one specimen. The latter has the dorsal region lineate and finely speckled with the overlying brown of the lateral color. One specimen has the marginal field of the tegmina greenish.

**\*Sisantum gracilicorne** (Bruner).

1910. *Orphula gracilicornis* Bruner, Entom. News, XXI, p. 301. [Puerto Bertoni, Paraguay.]

Misiones. March 15 and May 1, 1909. Two males.

These specimens have been compared with two topotypic females previously recorded by us.<sup>23</sup>

**Orphulella punctata** (DeGeer).

1773. *Acrydium punctatum* DeGeer, Mém. l'Hist. Ins., III, p. 503, pl. 42, fig. 12. [Surinam.]

Misiones. March 24, 1909; April 4 and 30, 1910; August 4, 1909; September 1, 1909; December 12 and 14, 1910. (Nos. 10 and 25.) Eight males, eleven females.

San Juan, Prov. of San Juan. Elev. 673 meters. January 14-20, 1909. One male.

Caucete, Prov. of San Juan. Elev. 567 meters. January 13, 1909. One male.

Pedregal, Prov. of Mendoza. Elev. 696 meters. September 20-22, 1906; December 1-18, 1906. Five males, one female.

A careful examination of this series and that already contained in the Academy collection, convinces us that our former position regarding the synonymy of *elegans* and *intricata* with this species<sup>24</sup> is correct. Bruner in his last table of species of the genus<sup>25</sup> gives full specific rank to these "forms." The San Juan, Caucete and Pedregal material would under his arrangement be referred to his new *elongata*, based on a single female from Corumbá, Brazil.

<sup>23</sup> *Entom. News*, XXII, p. 250.

<sup>24</sup> *Proc. Acad. Nat. Sci. Phila.*, 1906, pp. 27, 28.

<sup>25</sup> *Ann. Carneg. Mus.*, VIII, pp. 10-12.

These individuals are typical of the new "form," which is merely a long-winged phase of *punctata*, possibly the exclusive or predominating form in certain regions, but found also in a number of localities as we have it in our series from Sapucay, Paraguay (two individuals) and the Misiones (one individual). In the San Juan series green is the predominating color in the females, although one of that sex is brown, as is the Pedregal female. The Misiones series is, with the exception of the "*elongata*" individual, "*elegans*" and "*intricata*" inextricably confused, with typical individuals and intergrades.

The species is found over the greater portion of tropical America south at least to the parallel of Buenos Aires.

**Toxopterus miniatus** Bolivar.

1890. *Toxopterus miniatus* Bolivar, Anales Soc. Españ. Hist. Nat., XIX, p. 314. [Cumbase, Peru.]

Misiones. March 3-29, 1907. Four males, one female.

These specimens are inseparable from individuals from Sapucay, Paraguay, and Chapada, Matto Grosso, Brazil. In addition to these localities, it has been reported from Rio Janciro, Bolivia, extreme northern Argentina, and several Ecuadorean localities.

**Fenestra bohlsii** Giglio-Tos.

1895. *Fenestra bohlsii* Giglio-Tos, Zoolog. Jahrbücher, Abth. Syst., VIII, p. 807. [Paraguay.]

Bompland, Misiones. December 10. One immature female.

This species is known to range from central Paraguay (Sapucay) and the Misiones, south to Cordoba and Carcaraña, Argentina.

**Staurorhectus longicornis** Giglio-Tos.

1897. *Staurorhectus longicornis* Giglio-Tos, Boll. Mus. Zool. Anat. Comp., Torino, XII, No. 302, p. 26. [San Lorenzo and Tala, Argentina; Caiza, Bolivian Chaco.]

Misiones. January 12, 1911; February 24, 1910; May 5, 1910. (Nos. 17 and 36.) Two males, one female.

Bompland, Misiones. December 1, 1910. One immature male, one immature female.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. 1906. One female.

The female specimen from Chacras de Coria has the lateral carinae of the pronotum more strongly constricted mesad than in the majority of the females of the species, and subobsolete between the first and third transverse sulci. The coloration of this individual is different

from the types previously given by the author,<sup>26</sup> having the discoidal field of the tegmina with quadrate maculations and the marginal field largely ochraceous, the general appearance of the individual suggesting certain species of the genus *Scyllina*.

The range of this species extends from the Province of Mendoza (Chacras de Coria) and Cordoba northward.

\**Staurorhectus glaucipes* Rehn.

1906. *Staurorhectus glaucipes* Rehn, Proc. Acad. Nat. Sci. Phila., 1906, p. 34, figs. 9, 10. [Sapucay, Paraguay.]

Misiones, December 12, 1910. (No. 4.) Four males.

Bompland, Misiones. December 1, 1910. One male.

These specimens have been compared with paratypic females. We feel compelled to differ from Bruner<sup>27</sup> in placing this species in a genus (*Amblyscapheus*) distinct from *Staurorhectus longicornis*, the type of the latter genus. We have examined a considerable number of specimens of the two species and find that the two characters given as diagnostic of *Amblyscapheus* are not in this case important enough to be of generic value. These two are the "entire absence of lateral carinae on the pronotum" and the "valves of the ovipositor very blunt." The first character is one which is very strongly approached if not absolutely reached in our series of *longicornis*, while the second character, although constant, is of slight degree, not worthy in the present case of generic value. The claim of the genus *Amblyscapheus* for recognition is, however, completely destroyed by its author in the recent description of a species of the genus *Staurorhectus*, *S. intermedius*,<sup>28</sup> which has as characters the following: "lateral carinae of the pronotum almost obliterated on the anterior lobe" and "valves of ovipositor similar to those of *Amblyscapheus glaucipes* Rehn (*lineatus* Bruner)."

As the male was previously unknown, the following are its principal differences from the opposite sex.

Size small; form similar to that of the female. Head with the eyes slightly more prominent than in the female, face more retreating than in the other sex; interspace between the eyes distinctly narrower than the width of one of the eyes; frontal costa with the margins more subparallel and the sulcus deeper than in the female; antennae as long as the caudal femur, slightly deplanate proximad. Tegmina

<sup>26</sup> Proc. Acad. Nat. Sci. Phila., 1906, pp. 33, 34.

<sup>27</sup> Proc. U. S. Nat. Mus., XXX, p. 632. The species *Amblyscapheus lineatus* equals *S. glaucipes* as stated by us (Proc. Acad. Nat. Sci. Phila., 1907, p. 167) and later admitted by Bruner (Ann. Carneg. Mus., VIII, p. 31).

<sup>28</sup> Ann. Carneg. Mus., VIII, p. 31.

with the distal portion broader and less attenuate than in the female. Interspace between the mesosternal lobes slightly more longitudinal than in the female; metasternal lobes subattinent. Caudal femora slightly more robust than in the opposite sex.

Coloration similar to that of the female.

*Measurements.*

Length of body.....	16. mm.
Length of pronotum.....	3.3 "
Length of tegmen.....	12.5 "
Length of caudal femur.....	11.8 "

Sapucay, Paraguay, and the Misiones are the only known localities for the species.

***Euplectrotettix conspersus* Bruner.**

1900. *Euplectrotettix conspersus* Bruner, Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires, p. 40.<sup>29</sup> [Eastern slopes of the Andes at Mendoza, Argentina.]

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. April 10, 1907. One female.

This specimen fully agrees with a cotypic individual from Mendoza, loaned by Prof. Bruner. Our specimen is grayer with the darker maculations more decided, but these differences are purely individual.

The species is only known from the Mendoza region.

***Euplectrotettix schulzi* Bruner.**

1900. *Euplectrotettix Schulzi* Bruner, *ibid.*, p. 41. [Vicinity of Cordoba, Argentina.]

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. April 7, 1907. One male.

Mendoza, Prov. of Mendoza. Elev. 767 meters. April 24, 1908; May 11, 1908. Two females.

We have before us several typical specimens of this species loaned by Prof. Bruner and we are forced to the conclusion that he erred in associating female specimens with converging lateral carinae to the pronotum with males having those carinae non-converging. The former are to our mind *prasinus*, which varies in the coloration of the dorsum of the pronotum. Our two females agree with the males in the character of the lateral carinae and the coloration. One of the females is larger than the other, the measurements of the two being as follows:

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<sup>29</sup> Fig. 14 on page 41 of this paper is given as *E. conspersus*, but we are led to believe from typical material of all of the species, kindly loaned by Prof. Bruner, and our present series, that it represents *prasinus*.

Length of body .....	31. mm.	24. mm.
Length of pronotum.....	5.5 "	4.5 "
Length of tegmen .....	20+ "	17. "
Length of caudal femur.....	17.8 "	12.8 "

The range of this species is now known to extend as far west as the eastern foot of the Andes.

**Euplectrotettix prasinus** Bruner.

1900. *Euplectrotettix prasinus* Bruner, *ibid.*, p. 42, fig. 14 (erroneously titled *conspersus*). [Cordoba, Argentina.]

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. February 23, 1907. One male.

Cordillera de Mendoza. March 20, 1908. One female.

It is evident that this species has at least two color phases, one largely green and the other several shades of brownish, the latter in the extreme condition with little contrast in tones. In addition to these phases there is one form which has the dorsum of the pronotum uniform in color, and another with broad lateral longitudinal bars of velvety black on the same. The above-listed female and a typical female from Cordoba, loaned by Prof. Bruner, have the uniform pronotum, one in the green phase, the other in the brown phase. The Chacras de Coria male and a female from Cordoba, from Bruner and labelled *schulzi* by him, have the dorsum of the pronotum barred, the Chacras de Coria male being a well-contrasted brownish individual and the female strongly approaching the green phase.

The lateral carinæ of the pronotum are the same in all of the specimens, converging caudad to the first transverse sulcus, thence regularly diverging. In the male the tegmina are proportionately longer than in any other species of the genus and the whole form of the same sex is decidedly compressed.

The measurements of the above-mentioned specimens are as follows:

	Male Chacras de Coria. mm.	Female Cordoba. mm.	Female Cordoba. mm.	Female Cordillera de Mendoza. mm.
Length of body .....	20.	23.5	31. <sup>30</sup>	25.5
Length of pronotum .....	4.2	4.6	5.	5.1
Length of tegmen .....	20.	20.5	21.5	20.8
Length of caudal femur ...	13.2	14.4	15.5	15.5

This species is known only from the Provinces of Cordoba and Mendoza, Argentina.

<sup>30</sup> Abdomen greatly and abnormally distended.



**Seyllina picta** (Bruner).

1900. *P[lectrotettix] pictus* Bruner, *ibid.*, p. 38, fig. 13. [Provinces of Cordoba and Santa Fé, Argentina.]

Misiones. January 12, 1911. (No. 38.) One female.

Corrientes, Prov. of Corrientes. Elev. 76 meters. March 3, 1909. One male, one female.

Buenos Aires. May 1-3, 1907. One male, two females.

La Carlota, Prov. of Cordoba. Elev. 142 meters. May 7, 1907. One female.

Alto Pencosa, Prov. of San Luis. Elev. 660 meters. January 30, 1908. One female.

San Juan, Prov. of San Juan. Elev. 673 meters. January 20, 1909. (No. 41.) Four males.

Cordillera de Mendoza. November 26, 1906. One female.

This series gives more information regarding the distribution of this typically Argentine species than all we previously possessed. In the present series are all of the extreme points of the range of the species, this being from the Misiones, Corrientes and San Juan, south to Buenos Aires and west to the Cordillera de Mendoza.

**Stirapleura bruneri** Rehn.

1906. *Stirapleura bruneri* Rehn, Proc. Acad. Nat. Sci. Phila., 1906, p. 49. ["Argentina from the Pampa Central, extending into Uruguay to the eastward."]

Misiones. December 14, 1910. Two males.

Buenos Aires. May 3, 1907. One male, five females.

This series is found to be identical with specimens from Carcaraña, Argentina, which we select as the type locality of the species.<sup>31</sup>

The females all have greenish more or less the predominating color, all of the males having their patterns in browns and ochres without any indication of green. In extreme greenish specimens from Buenos Aires, this color is that of all the light areas of the sides and dorsum, while in the other extreme of that phase the only decidedly green sections are the face, genæ and humeral streak of the tegmina.

What is probably this species was recorded by Berg<sup>32</sup> as *Stenobothrus signatipennis* (Blanchard) from Cerro Blanco, Nueva Roma, and the Naran-Choyque, southwestern Buenos Aires. The same

<sup>31</sup> The name *bruneri* was given to replace *S. signatipennis* Bruner, 1900 (not of Blanchard, 1851), the distribution of which, given above, was all that was cited by Bruner for the species. We possess two pairs determined by him, from Carcaraña, and we here designate this place as the type locality.

<sup>32</sup> *Entom. Zeit. Stettin*, XLII, p. 38.

author credited the species to Chile (apparently after Blanchard and in reference to true *signatipennis*) and Uruguay.

Subfamily CEDIPODINÆ.

*Trimerotropis pallidipennis* (Burmeister).

1838. *Oedipoda*] *pallidipennis* Burmeister, Handb. der Entom., II, Abth. II, pt. 1, p. 641. [Zimapan, Hidalgo, Mexico.]

Alto Pencosa, Prov. of San Luis. Elev. 660 meters. November 21-22, 1908. Four males.

La Paz, Mendoza. Elev. 504 meters. November 15, 1908. One female.

Pedregal, Prov. of Mendoza. Elev. 696 meters, November 23, 1906; December 16 and 30, 1906. One male, two females.

Mendoza, Prov. of Mendoza. Elev. 767 meters. February 23, 1908; March 13 and 27, 1908; April 2-24, 1908; May 2-31, 1908; June 5-12, 1907-1908; July 27, 1907; September 27, 1908; October 26, 1908; November 12 and 29, 1907; December 2 and 10, 1907. Nineteen males, nineteen females.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 7-22, 1907-1908; February 9-24, 1907; March 27, 1907; April 4-24, 1907, 1908 and 1909; May 25, 1907; November 2, 1906. Eight males, nine females.

Potrillos, Prov. of Mendoza. Elev. 1,368 meters. December 27, 1908. One female.

Cordillera de Mendoza. March 20, 1908; November 21, 1906. Three males, one female.

This extensive series shows that the species varies tremendously in size and color, in these respects being paralleled by similar variation in the closely allied, if at all distinct, North American *T. vinculata*. The same variations in general size, color tone, width, intensity, solidarity, and curve of tegminal bands, intensity and width of wing band, tone of wing disk and colors of ventral sulcus of caudal femora are noted as in *vinculata*.

The rugosity of the metazonal disk varies individually in both sexes, while the caudal angle of the pronotum shows variants ranging from slightly obtuse to slightly acute, the majority having it rect-angulate.

The species has a very considerable range, having been recorded from north-central Mexico south to at least as far as the provinces of Santa Fé, Cordoba, San Luis, and Mendoza, Argentina.

## Subfamily OMMEXECHINÆ.

**Parossa**<sup>33</sup> *viridis* (Giglio-Tos).

1897. *O[ssa] viridis* Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Torino, XII, No. 302, p. 27. [Caiza and San Francisco, Bolivian Chaco; San Lorenzo, Jujuy, Argentina.]

Jujuy, Prov. of Jujuy. April, 1911. Four females.

San Juan, Prov. of San Juan. Elev. 673 meters. January 17-20, 1909. One male, two females.

Alto Pencosa, Prov. of San Luis. Elev. 660 meters. December 21, 1908. One female.

La Paz, Prov. of Mendoza. Elev. 504 meters. December 19, 1908. One male, one female.

Pedregal, Prov. of Mendoza. Elev. 696 meters. January 3-5, 1907. Two males, two females.

Mendoza, Prov. of Mendoza. Elev. 767 meters. January 2-16, 1908; February 12, 1908; April 3, 1908; May 24, 1908; June 5, 1908. Four males, five females.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 19-29, 1907; February 2-13, 1908; March 27, 1907; April 5-11, 1907. Fifteen males, five females, one immature female.

Blanco Encalada, Prov. of Mendoza. Elev. 1,068 meters. February 12, 1908. One male, one female.

Punta del Agua, Prov. of Mendoza. February 27, 1907. Two females.

San Ignacio, Prov. of Mendoza. Elev. 1,235 meters. March 15-22, 1908; April 5, 1908. Three males, three females.

Potrerillos, Prov. of Mendoza. Elev. 1,368 meters. January 20, 1908. Two males, four females.

This very interesting series throws some light on the color phases of the species. It is apparent that three are present: first, a green phase, which was that originally described by Giglio-Tos; second, a brownish or dull wine-colored phase, and, third, a speckled phase. The green phase shows little variation in itself aside from that in the yellowish tone of the green base color and the more or less pronounced character of a yellowish wash on the dorsal section of the tegminal

<sup>33</sup> After examining the literature involved, we can substantiate what Bruner (Ann. Carneg. Mus., VIII, p. 38, footnote) has said regarding the proper status of Blanchard's genus *Paulina*. It is clearly the same as *Calopterna* Stål, which name it should replace, and in no way related to *Ossa* Giglio-Tos, which through an unfortunate preoccupation must fall, and in place of which Bruner has erected *Parossa*.

bases.<sup>34</sup> The brownish phase varies in tone from pale dull wine color (vinaceous) and clay color to burnt umber, the caudal femora in the extreme condition with more or less apparent transverse dark bars on the dorsal face, and in the same pronounced type the caudal tibiae are of the general tone. The brownish phase and the normal greenish phase are apparently connected by intermediate types, some individuals being of the green phase with the dorsum of the pronotum and the tegmina weakly vinaceous, while other specimens, which otherwise would be referred to the brownish phase, have yellowish the underlying color, the femora unbanded and the tibiae of the glaucous of the green phase. The speckled phase also shades into both of the other forms and is characterized by a mottling of bistre, olive-green, or bay over the underlying bright gamboge to lemon-yellow of the pronotum and head of those specimens approaching the green phase and over burnt umber in the single (Jujuy) specimen approaching (or rather in) the brownish phase. These fine mottlings are either general on the dorsum or grouped in two irregular longitudinal bars, which are postocular in their position, the interocular portion of the head also being much suffused. In the extreme condition of this phase the femora are moderately banded dorsad, the tibiae being of the color which the general tone of the individual more nearly approaches. These phases are not geographic, as the Mendoza series has all three, but apparently a certain type is more numerous in one locality than in others. All of the Potrerillos material is either in or very closely approaching the speckled phase, while, aside from several brownish individuals, all of the Chacras de Coria representatives are in or very near the green phase.

There is considerable size variation, but this appears to be individual and not geographic.

The range of the present species is known to extend from the Bolivian Chaco (Caiza and San Francisco, cotypic individuals being before us) and Jujuy, south to the Provinces of Santa Fé (Carcaraña), Cordoba, San Luis (Alto Pencosa), and Mendoza (*vide supra*).

**PACHYOSSA** n. gen.

Intermediate in position between *Parossa* Bruner (*Ossa* Giglio-Tos) and *Ommexecha* Serville, sharing certain characters of each, but far

<sup>34</sup> Superficially, this might suggest to some an approach to *P. bimaculata*, which is in part characterized by having large yellowish maculations in the same regions, but in the present form the yellow is never as decided or as sharply outlined, while excellent structural characters readily differentiate the two species.

closer to the former. With *Parossa* it agrees in the general form of the occiput and interocular region, the reduction of spines on the pronotum and tubercles on the limbs, the non-spiniform ventro-caudal angles of the lateral lobes and the rounded internal angle of the mesosternal lobes; while from *Parossa* it differs in the subrostrate interantennal portion of the frontal costa, the tuberculate caudal margin of the pronotal disk, the scabrous dorsum of the same, the peculiar coriaceous texture and subnodulose surface of the tegmina, in this respect resembling *Ommexecha* and *Spathalium*, and in the abbreviate, robust form.

Form robust, abbreviate; surface of head, pronotum, and femora multituberculate; head, pronotum, venter, and limbs, but particularly the latter two, strongly villose. Occiput bullate; interocular region very broad, greatly exceeding the width of the eye, greatly declivent, non-impressed; frontal costa subrostrate between the antennæ, evanescent ventrad, sulcate dorsad; eyes subglobose. Pronotum robust, greatest dorsal width subequal to its length; prozona hardly elevated, metazona depressed cephalad, transversely elevated caudad; cephalic margin slightly emarginate mesad, caudal margin very broadly obtuse-angulate with three pairs of marginal nodes; lateral lobes with the ventro-caudal angle very broadly rounded, non-spiniform. Tegmina broad, sublanceolate, apex moderately rounded; texture coriaceous; surface without decided nodes, but with certain of the transverse veins of the discoidal and anal fields slightly elevated. Wings perfectly developed. Interspace between the mesosternal lobes very decidedly transverse, the margins of the lobes rounded; metasternal interspace more transverse than the mesosternal one.

Type.—*P. signata* n. sp.

*Pachyossa signata* n. sp.

Type: ♀; Misiones, Argentina. January 12, 1910. (P. Jorgensen; No. 22.) [Acad. Nat. Sci. Phila., type No. 5,218.]

Size medium; form fusiform, subdepressed; surface of the head with the tubercles fewer and lower on the occiput than elsewhere, pronotum ruguloso-tuberculate, hairs on the head, pronotum, and pleura few and scattered, around the insertion of the limbs and on the same very much more numerous. Head with the greatest width contained less than one and one-half times in the depth of the same; interocular space one and two-thirds times the length of the eye, greatly declivent to the subvertical fastigium, which is delimited

caudad by an obtuse-angulate series of tubercles, passing cephalad into the frontal costa without interruption; frontal costa when seen from the side arcuate subrostrate between the antennæ, obsolete ventrad, dorsad with a V-sectioned sulcation; eyes subglobose, their length contained about one and one-third times in the length of the infra-ocular genæ; antennæ incomplete. Pronotum with the median carina indicated only on the prozona and there by a tuberculate ridge, slightly arcuate in profile; lateral angles indicated on the metazona and there only by bluntly rounded, low-tuberculate shoul-

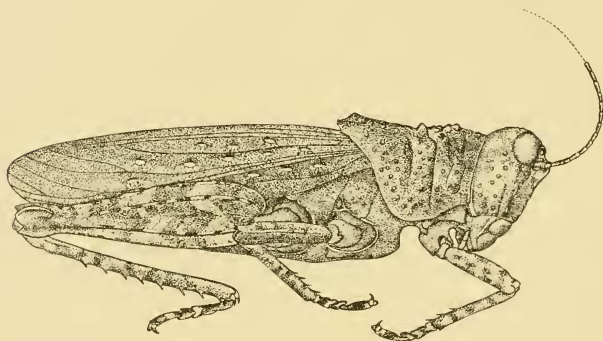


Fig. 12.—*Pachyossa signata* n. gen. and sp. Lateral view of type. ( $\times 3$ .)

ders, on the prozona no trace of the angles exists; transverse sulci weak, indications of four present, only the caudal at all distinctly marked; lateral lobes with the greatest depth contained about one and one-third times in the greatest length of the same, caudal margin oblique subtruncate, the ventro-caudal angle very broadly rounded and extending considerably ventrad of the ventro-cephalic angle, which is obtuse. Tegmina nearly two and one-half times as long as the pronotum, the greatest width at the proximal fourth and contained over three times in the length, thence rather evenly tapering to the rather narrowly rounded apex; marginal field broad at the proximal fourth, there slightly more than a third the total width of the tegmen; sutural margin very slightly but regularly arcuate; the transverse vein-groups which form subnodose elevations are formed by a number of very short transverse veinlets coalescing and filling up the intervening cells, the contrast between these groups and the distinctly outlined cells between the elevations bringing them into greater prominence. Wings with their length subequal to that of the tegmina when both are in repose, the greatest width contained

nearly twice in the length of the same; apex well rounded. Prosternum transversely carinate with a compressed trigonal projection mesad; interspace between the mesosternal lobes four times as broad caudad as deep, the lateral margins diverging, obliquely rounded; interspace between the metasternal lobes even more decidedly transverse than that between the mesosternal lobes. Cephalic and median limbs strongly villose. Caudal femora one and two-thirds times the length of the pronotum, pattern of the pagina moderately regular; caudal tibiae subequal to the femora in length, armed on the external margin with six spines; caudal metatarsus subequal to the remainder of the tarsus in length; all of the caudal limb strongly and thickly villose.

General color clove brown, passing into vandyke brown mottled with wood brown on the limbs; ventral surface mummy brown, becoming wood brown on that aspect of the limbs. Head, pronotum, and pleura with the tubercles varied with pale brown and blackish, so that the general color is modified in a "pepper-and-salt" fashion; lower part of the face with much wood brown; eyes raw sienna; antennæ with the joints blackish, each joint margined distad with ochraceous. Tegmina with the base color seal brown, with a reticulate pattern of wood brown and ecru drab formed by the coloring of groups of veins, both longitudinal and transverse, the ecru drab predominating toward the apex and the costal margin; anal field with a proximal ovate spot of clear orpiment orange, which is completely hidden when the tegmina are in repose. Wings strongly infusate with clove brown proximad, this passing gradually into the pale creamy-white of the apex, where the veins alone retain the color of the proximal portion. Limbs mottled and blotched with the general colors, the caudal femora with two irregular pale transverse bars, which are V-shaped on the external face. Hairs of the entire body straw yellow.



Fig. 13.—*Pachyossa signata* n. gen. and sp. Dorsal outline of head and pronotum. ( $\times 3$ .)

#### Measurements.

Length of body.....	28.	mm.
Length of pronotum.....	8.	"
Greatest dorsal width of pronotum.....	7.	"
Length of tegmen.....	21.	"
Greatest width of tegmen.....	6.	"
Length of caudal femur.....	13.2	"

Information with the unique type is to the effect that it was taken from stones of a very similar coloration.

\**Ommexechea giglio-tosi* Bolivar.

1899. *O[mmexechea] Giglio-Tosi* Bolivar, Revista Chilena Hist. Nat., III, pp. 54, 55. [Caiza, Aguiarenda, and San Francisco, Bolivian Chaco.]

Jujuy, Prov. of Jujuy. April, 1911. Five males, three females.  
Embarcacion, Prov. of Salta. April, 1911. Three females.

This series of specimens show two types of structure, one with the pronotum more sellate than the other, but we do not feel warranted in separating them specifically. Both forms are in the Jujuy series, but only that with the more sellate pronotum in the Embarcacion lot.

The wings are pale azure on the disk, the apex very lightly infumate, with the transverse veins of the discoidal and adjacent portion of the axillary fields seal brown.

The above localities are all from which the species is known.

\**Ommexechea germari* Burmeister.

1838. *O[mmexechea] Germari* Burmeister, Handb. der Entom., II, abth. II, pt. 1, p. 655. [Brazil.]

Misiones. August 4, 1909. One female.

This individual is inseparable from representatives from Sapucay, Paraguay.

The present species has been recorded from Brazil (specifically São Leopoldo [Bolivar], Porto Alegre [Karsch], and Corumbá [Bruner]), Paraguay (specifically Villa Rica [Giglio-Tos] and Sapucay [Rehn]) and the Misiones. This is the first record of the species from Argentina.

*Ommexechea servillei* Blanchard.

1837. *Ommexechea Servillei* Blanchard, Ann. Soc. Entom. France, V, p. 613, pl. XXII, figs. 2, 3. [Province of Corrientes, Argentina.]

Misiones. May 12, 1910; November 9, 1910; December 12 and 17, 1910. (No. 20.) Four males, two females.

All of these specimens are brownish in coloration and we have provisionally retained the name *servillei* for them, although we have little doubt that topotypes of Serville's *virens*, from Buenos Aires, will show that name to have been based on a green color phase of the present insect.

Previous records of *servillei* are from Porto Alegre, Rio Grande do Sul (Karsch), Sierra Geral, Santa Catharina (Karsch), São Paulo (Bruner), Reboucas (Rehn), Corumbá, Matto Grosso (Bruner), Matto Grosso (Karsch), Brazil; Asuncion and San Bernardino, Paraguay (Bruner), Sapucay, Paraguay (Rehn, as *virens*), and Misiones and Corrientes, Argentina.



\* *Spathalium*<sup>35</sup> *stáli* Bolivar.

1884. *Spathalium Stáli* Bolivar, Ann. Soc. Españ. Hist. Nat., XIII, p. 32.  
[São ("San") Leopoldo, Rio Grande do Sul, Brazil.]

Misiones. January 12, 1911; October 31, 1910; November, 1910.  
(No. 30 and 37.) One male, two females.

The present specimens are clearly referable to this species, which was previously known only from the original description. Two facts are evident from the material before us, these being that the species is dichromatic and that the length of the tegmina and wings varies greatly in the same.

The type was of a greenish color phase, which is almost matched by one of the females in hand, the green of the tegmina apparently being more extensive than in the type, as it colors the adjacent portions of the marginal and anal fields of the tegmina as well as the discoidal as described. The other individuals are of a similar pattern, but in several tones of brown with no evidence of green.

The tegmina show considerable length variation as well as some in the form of the apex of the same. The latter may be acute-angulate without any trace of bluntness or of similar general outline, with the immediate apex narrowly rounded. The wings are described as "dimidiæ elytrorum longitudinis," while in one of the present females the wings are about two-thirds of the tegminal length, and in the other they fall but little short of the tegminal apices when in repose. In the male the wings are subequal to the tegmina when closed.

The measurements of the present material and of the type are as follows:

	Male. mm.	Female. mm.	Female. mm.	Female (type). mm.
Length of body .....	22.	34.5	33.	32.
Length of pronotum .....	7.5	10.	10.	9.5
Greatest dorsal width of pronotum .....	6.2	9.2	9.6	.....
Length of tegmen .....	23.	27.2	33.5	23.
Length of caudal femur ..	13.2	16.8	20.	16.

<sup>35</sup> The specimens from Chapada, Matto Grosso, Brazil, recorded by us as *Spathalium cyanopterum* (Proc. U. S. Nat. Mus., XXXVI, p. 110), we find on re-examination to be *S. klugii* (Burmeister), which Bolivar synonymized under *S. serrulatum* Thunberg, the type of Burmeister's species having been examined by him. There seems no doubt but that his description of "*serrulatum*" was in part drawn from this specimen. On examination of the original description of *serrulatum* we have been unable to positively place the species, but it does not seem to be the same as *klugii*. Kirby (*Syn. Catal. Orth.*, III, p. 298) has given the synonymy correctly and permitted both names to stand. Bruner, unfortunately, has redescribed *klugii* as *S. bolivari* (*Ann. Carneg. Mus.*, VIII, p. 39). Our material fully agrees with his description and that of Burmeister and of Bolivar.

## Subfamily LOCUSTINÆ.

**Coryacris angustipennis** (Bruner).

1900. *Eleochochloa angustipennis* Bruner, Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires, p. 58. [Rosario, Prov. of Santa Fé, Argentina.]  
 1909. *Coryacris diversipes* Rehn, Proc. U. S. Nat. Mus., XXXV, p. 111, figs. 1 and 2. [Corumbá, Matto Grosso, Brazil.]

Posadas, Misiones. March 6 and 7, 1909; April 8, 1910. Two males, one female.

These specimens have been compared with a paratypic female of *diversipes* from Cuyaba, Matto Grosso, and found to be inseparable. Bruner has recently established the above synonymy,<sup>36</sup> which appears to be correct.

The localities given above are all that are known for the species.

**Prionolopha serrata** (Linnæus).

1758. [*Gryllus (Bulla) serratus* Linnæus, Syst. Nat., X ed., p. 427. ["Indiis."]]

Embarcacion, Prov. of Salta. April, 1911. One female.

This striking species, which ranges northward to northern South America, has been recorded from as far south as Tucuman and Resistencia nel Chaco, Argentina.

**Diedronotus lævipes** (Stål).

1878. *Tropidonotus lævipes* Stål, Bihang till K. Svenska Vet.-Akad. Handl., V, No. 9, p. 20. [São Leopoldo, Brazil; Argentine Republic.]

Misiones. January 10, 1911; January 12 and 26, 1910; November 26, 1909. (Nos. 21 and 34.) Three males, one female.

This interesting form has been recorded from a number of localities extending from southern Brazil and Paraguay south as far as Buenos Aires. According to Bruner, it inhabits the open "camp."

**Diedronotus angulatus** (Stål).

1873. *Tropinotus angulatus* Stål, Öfv. Kong. Vet.-Akad. Förh., 1873, No. 4, p. 52. [Bahia, Brazil.]

Jujuy, Prov. of Jujuy. April, 1911. Two males.

Embarcacion; Prov. of Salta. April, 1911. One female.

This species has been recorded from several Brazilian localities south to as far as Asuncion, Villa Rica, and Sapucay, Paraguay, and Tucuman, Argentina (Giglio-Tos), the latter being the only previous Argentine record.

**Diedronotus discoideus** (Serville).

1831. *Tropinotus discoideus* Serville, Ann. Sci. Nat., XXII, p. 273. [Brazil.]

Misiones. March 26 and 30, 1909; April 12 and 20, 1910; September 16, 1910. Two males, four females.

<sup>36</sup> *Ann. Carneg. Mus.*, VIII, p. 53.

All of these specimens, except the March 30 female, have the tegmina distinctly maculate, the exception having the discoidal field with the faintest possible indication of the usual blotching. The male and female taken March 30 were in coitu, and the two represent the extremes in maculation of the discoidal field of the tegmina. The anal field of the tegmina is unicolorous in all of the specimens.

Information with one specimen is to the effect that the species is "common."

Northward this form has an extensive range, while the southern border of its distribution extends from Jujuy (Giglio-Tos) eastward to Buenos Aires (Giglio-Tos) and Rio Grande do Sul, Brazil (Rehn).

*Elæochlora viridicata* (Serville).

1839. *Xiphicera viridicata* Serville, Hist. Nat. Ins. Orthopt., p. 614.  
[Buenos Aires.]

Buenos Aires. February 14 and 20, 1909. Three males.

Misiones. January 3 and 5, 1910; February 1, 1910; March 20-26, 1910; December 3, 1909; December 12 and 24, 1910. (No. 2.) Six males, eight females.

The Buenos Aires specimens are typical of the species, while the Misiones series is referred here with some doubt, differing much as does the Sapucay, Paraguay representation previously examined by us.<sup>37</sup> The pronotum is, in the Misiones specimens, more compressed than in Buenos Aires individuals, the fastigium shorter and broader in the male, being more of an equilateral triangle, and the coloration different, the median line of the pronotum being much narrower, while the humeral regions of the pronotum of the male are washed with dull purplish and the caudal tibiæ of the same sex are wax yellow to pale orange, without reddish as in typical *viridicata*. The females have the tibiæ green as in Buenos Aires specimens, the spines and tarsi usually without sanguineous, although this is indicated in two Misiones individuals. It is probable that the Sapucay and Misiones series are specifically or subspecifically distinct from *viridicata*, but we have refrained from recognizing their differences with a name. It seems more desirable at present to get a better conception of the real value of these differences, which can only be done by the acquisition of more material from a number of localities.

This species has been recorded from points extending from the type locality north to Chapada, Matto Grosso, Brazil.

<sup>37</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 174.

**Chromacris miles** (Drury).<sup>38</sup>

1773. *Gryll[us] Loc[usta] miles* Drury, *Illust. Nat. Hist. Exot. Ins.*, II, pp. 79 and Index, pl. XLII, fig. 2. [Bay of Honduras.]

Misiones. February 20, 1909; December 1-14, 1909-1910. (No. 14.) Two males, five females, three nymphs.

Buenos Aires, February 14 and 20, 1909. Two males, three females.

Jujuy, Prov. of Jujuy. April, 1911. One male,

Alto Pencosa, Prov. of San Luis. Elev. 660 meters. January 30, 1908; February 2, 1908. Three males, five females.

Mendoza, Prov. of Mendoza. Elev. 767 meters. February 29, 1908. One male.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. February 6-16, 1907-1908; April 11, 1907. Three males, seven females.

We have before us specimens from Meridá, Yucatan, contained in the Hebard Collection, which agree absolutely with the original description of *miles*. The material from Argentina and Paraguay shows certain constant differences which have already been emphasized by Pictet and Saussure.<sup>39</sup> Any expression of the exact relationship of the material from the two regions seems best withheld, until at least sufficient series from other localities can be examined, thus enabling us to judge more clearly how constant over definite regions apparent differences are. The Meridá individuals, seven in number, are constant and typical. All of the Argentine and Paraguayan specimens seen are duller with the pale maculations more orange-rufous than yellow, the wings with the pale areas brick red or orange, the pale occipital bars narrower and the pale areas of the caudal margin of the pronotum usually not continuous, but broken

<sup>38</sup> In studying the present series of this species we have made a rather extensive re-examination of our material of this and allied forms, as well as the literature bearing on the subject. It is in consequence necessary to correct certain previous references which are erroneous on account of a confusion of *miles* and *stolli*. Bruner's first reference of *stolli* (*Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires*, p. 60) should be credited to *miles*, as material before us studied and determined by him at that time shows. Specimens of *stolli* from British Guiana, also from him, we find labelled *miles* in his handwriting. The present author, partly by following these determinations, is responsible for the following misidentifications, which should refer to *C. miles*.

*Chromacris stolli* Rehn (*nec* Pictet and Saussure), *Entom. News*, XVI, p. 38. [Sapucay, Paraguay.]

*Chromacris stolli* Rehn (*nec* Pictet and Saussure), *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 174. [Sapucay, Paraguay.]

*Chromacris stolli* Rehn (*nec* Pictet and Saussure), *Entom. News*, XXII, p. 251. [Puerto Bertoni, Paraguay.]

<sup>39</sup> *Mitt. Schweiz. Entom. Gesell.*, VII, p. 350, as variety A.

into spots or areas somewhat as in *stolli*, but less decided than in that form.

The Misiones series has the wings more reddish than the other lots, while the Chacras de Coria individuals have these more orange.

The provinces of Buenos Aires, Cordoba, and Mendoza seem to be the southern limit of the species.

\* *Zoniopoda iheringi* Pietet and Saussure.

1887. *Zoniopoda Iheringi* Pietet and Saussure, *Mith. Schw. Entom. Gesell.*, VII, p. 357. [Southern Brazil.]

Misiones. February 8 and 14, 1910; 15 and 21, 1909 and 1910; December 8 and 23, 1910. (No. 18.) Four males, three females.

These specimens have been compared with individuals from Sapucay, Paraguay, and a female from Rio Grande do Sul, Brazil, received from and determined by Saussure. It is evident that considerable size variation is found in the species, as we have differences in the extremes of the two sexes from Misiones as follows:

	Male.		Female.	
	mm.	mm.	mm.	mm.
Length of body .....	27.	32.5	35.	49.5
Length of pronotum .....	6.2	7.5	8.9	12.2
Length of tegmen .....	24.5	26.	32.5	37.
Length of caudal femur .....	14.7	17.	19.	25.5

There is also an appreciable amount of variation in the general form, some specimens, irrespective of sex, being more compressed than others, more noticeably so in the male than in the female, and quite irrespective of locality. A casual examination would lead one to suppose that two species were present, but careful study shows that the extremes cannot be separated on account of the intermediate individuals. The median carina of the pronotum shows some variation in prominence in both sexes.

In color there is marked variation in the shade of blue on the disk of the wing, in some individuals this being Nile blue, flax flower blue (Ridgway) in others, running through heliotrope purple to phlox purple. This variation does not appear to be correlated with sex, locality, size, or degree of compression. The caudal tibiae also vary in general color from cream to scarlet vermilion dorsad, with the ventral surface very pale apple green.

Information with one specimen is to the effect that the species is gregarious. Its range is known to extend from Chapada, Matto Grosso (Bruner), and Rio Grande do Sul (Rehn), Brazil, to the Misiones.

**Zoniopoda cruentata** (Blanchard).

1846. *Acridium cruentatum* Blanchard, in D'Orbigny, Voy. dans l'Amér. Merid., VI, pt. II, p. 216, pl. XXVII, fig. 5. [No locality.]

Jujuy, Prov. of Jujuy. April, 1911. One male.

La Carlota, Prov. of Cordoba. Elev. 142 meters. May 8, 1909. One female.

Mendoza, Prov. of Mendoza. Elev. 767 meters. April 9, 1908. One female.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 15-30, 1907-1908; February 7-15, 1907-1908; March 23-25, 1907; April 4-18, 1907 and 1909; May 22-23, 1907. Five males, twelve females.

Pedregal, Prov. of Mendoza. Elev. 696 meters. January 14, 1907; December 13, 1906. Two males.

Misiones. November 12, 1909; December 10-12, 1909. Five males.

This series is very constant in coloration aside from a slight variation in the depth of the ground color of the head. The Jujuy individual, alone of the series, has the proximal portion of the external face of the caudal femora more olive green than in the other specimens and blending into the blackish disto-median band. There is no tendency in the series to approach the Brazilian *Z. tarsata* (Serville).

The northern limit of the range of the present species is not definitely known, as most of the records are confused with *tarsata*, but to the southward, where *cruentata* alone is found, its range is given by Bruner as "central and northern Argentina." The above records and that from Buenos Aires (Giglio-Tos) are the most southern definitely known ones.

**Zoniopoda omnicolor** (Blanchard).

1846. *Acridium omnicolor* Blanchard, *ibid.*, p. 216, pl. XXVII, fig. 3. [No locality.]

Jujuy, Prov. of Jujuy. April, 1911. One female.

This species has been recorded from as far north as Caiza, Bolivian Chaco (Giglio-Tos), and Sapucay, Paraguay (Rehn; Bruner), south to Santiago del Estero (Stål) and Cordoba, Argentina (Bruner).

**Diponthus electus** (Serville).

1839. *Acridium electum* Serville, Hist. Nat. Ins. Orthopt., p. 67. [Montevideo.]

Misiones. November, 1910; December 17 and 22, 1910. (No. 32.) Two males, one female.

This beautiful species is easily recognized by its nearly uniform colored tegmina and longitudinally barred pronotum. The present

individuals all have the caudal tibiae more or less extensively pinkish purple distad, in the female this color covering almost the whole of the tibiae, while the dorsum of the tarsi are suffused with the same color in all. The pale head and pronotal lines vary from dull straw yellow to clay color, the pale areas of the caudal femora closely agreeing with this color, while the darker pronotal bars vary from dark oil green to purplish brown; the dark areas of the pleura and caudal femora agree in color with the dark pronotal bars.

The previous records of this species are from Montevideo (Serville) and Patagonia (Pictet and Saussure).

\* *Diponthus festivus* Gerstaecker.

1873. *Diponthus festivus* Gerstaecker, Entom. Zeit., Stettin, XXXIV, p. 193. [Porto Alegre, Rio Grande do Sul, Brazil.]

Misiones. November 26, 1909; December 1 and 18, 1909-1910. Three females.

This striking species has only been recorded from the type locality and by Pictet and Saussure without exact locality from the same state (Rio Grande do Sul).

\* *Diponthus crassus* Bruner.

1910. *Diponthus crassus* Bruner, Entom. News, XXI, p. 303. [Puerto Bertoni, Paraguay.]

Misiones. October 27, 1909; November 9 and 12, 1907 and 1909; December 12, 1909. Four males, five females.

These specimens are perfectly typical of this very distinct recently described species. As the male was previously unknown, the measurements of an average individual of that sex may be of interest: length of body, 24 mm.; length of pronotum, 5.2; length of tegmen, 16.3; length of caudal femur, 14. Of the above series three pairs, taken in November and December, were captured in coitu.

The type locality and the Misiones are the only localities from which the species is known.

\* *Diponthus paraguayensis* Bruner.

1906. *Diponthus paraguayensis* Bruner, Proc. U. S. Nat. Mus., XXX, p. 657. [Sapucay, Paraguay.]

Misiones. May 5, 1910; November 12, 1909; December 12, 1910. (Nos. 3 and 6.) Three males, six females.

The variation in color tone previously noted by us in this species<sup>49</sup> is evident in the present series. Information with the species is to the effect that it is very common.

<sup>49</sup> Proc. Acad. Nat. Sci. Phila., 1907, p. 179.

The only localities known for this form are that of the type and the Misiones.

**Diponthus argentinus** Pictet and Saussure.

1887. *D[iponthus] argentinus* Pictet and Saussure, Mitt. Schweiz. Entom. Gesell., VII, p. 372. [Buenos Aires.]

Mendoza, Prov. of Mendoza. Elev. 767 meters. April 9, 1908. One female.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 31, 1907; April 3, 1907; December 3, 1903. Two adult and one immature female.

Cordillera de Mendoza. April 3, 1908. One female.

Potrillo, Prov. of Mendoza. Elev. 1,368 meters. December 27, 1907. One male, one female.

These specimens vary considerably in the tone of both the dark and light base colors, the former being olive green in some, blackish in others, while the pale shade varies from nearly clear yellow or creamy yellow to decided dull orange.

The single immature individual was taken April 3, 1907.

This species ranges from Buenos Aires west to the Cordillera de Mendoza, while to the north or south we know nothing of the limits of its distribution.

**Leptysmia filiformis** (Serville).

1839. *Opsomala filiformis* Serville, Hist. Nat. Ins. Orthopt., p. 593. [The north of the State of São Paulo, Brazil.]

Misiones. March 18, 1909; December 12, 1909. (No. 12.) Two males.

These specimens fully agree with São Paulo females now before us.

The species has been recorded from as far north and east as Rio de Janeiro, Brazil (Bolívar), south to the Rio Colorado, Buenos Aires (Berg), west to San Lorenzo, Jujuy (Giglio-Tos), and Chapada, Matto Grosso, Brazil (Bruner).

\***Leptysmia obscura** (Thunberg).

1827. *Truxalis obscura* Thunberg, Nova Acta Reg. Soc. Scient. Upsal., IX, p. 79. [Brazil.]

Misiones. December 2 and 12, 1909. (No. 12.) Two males.

These individuals fully agree with males from Sapucay and San Bernardino, Paraguay.

The range of this species extends from Bonito, Pernambuco, Brazil (Rehn), south to the Misiones, west to Chapada, Matto Grosso, Brazil (Bruner; Rehn).



**Leptysmina pallida** Giglio-Tos.

1894. *Leptysmina* *pallida* Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 35. [Resistencia nel Chaco, Argentina.]

Buenos Aires. February 20 and 26, 1909. Two males, one female.

The present individuals have been compared with Carcaraña, Argentina specimens. The localities from which this species has been recorded, in addition to those given above, are Carcaraña and Rosario, Argentina, and with a query from Victoria, Brazil (all by Bruner in error for *L. rosea*).

**\*Oxybleptella sagitta** Giglio-Tos.

1894. *Oxybleptella sagitta* Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 33. [Villa Rica, Paraguay.]

Misiones. August 2, 1910. One male.

This specimen is inseparable from Sapucay, Paraguay, individuals.

The records of this species are from Villa Rica, Paraguay (type), Paraguay (Giglio-Tos), Sapucay, Paraguay (Rehn), São Paulo, Brazil (Bruner), and Chapada, Matto Grosso, Brazil (Bruner). The latter record, we believe, probably relates to the closely allied *O. pulchella*.

**\*Inusia pallida** Bruner.

1906. *Inusia pallida* Bruner, Proc. U. S. Nat. Mus., XXX, p. 660. [Sapucay, Paraguay.]

Misiones. April 19, 1909. One male.

This species was previously known only from the unique female type. The present individual agrees satisfactorily with the original description except that the green color of the type is replaced in the present specimen by dull ochraceous, the dark lateral line is even more decided than in the type and the proportions are, as usual in opposite sexes, somewhat different. The measurements of the present specimen are: length of body, 20.8 mm.; length of pronotum, 4.3; length of tegmen, 22; length of caudal femur, 11.5.

**Oxyblepta puncticeps** (Stål).

1860. *Opsomala puncticeps* Stål, Kong. Svenska Fregat. Eugenies Resa, Zool., Ins. I, p. 325. [Rio Janeiro, Brazil.]

Misiones. April 26, 1909. One male, one female.

This species has also been recorded from Rio Janeiro (Stål) and Corumbá (Rehn; Bruner), Brazil; Paraguay (Giglio-Tos), Sapucay, Paraguay (Bruner); Caiza and San Francisco, Bolivian Chaco (Giglio-Tos); San Lorenzo, Jujuy (Giglio-Tos), and Resistencia nel Chaco (Bruner), Argentina.

**Oxyblepta bohlsii** (Giglio-Tos).

1895. *S[tenopola] bohlsii* Giglio-Tos, Zoolog. Jahrbücher, Abth. Syst., VIII, p. 813. [Paraguay.]

Misiones. May 20, 1910. One female.

The previous records of this species were from Chapada (Bruner) and Corumbá (Rehn; Bruner), Brazil; Paraguay (Giglio-Tos), Sapucay, Paraguay (Bruner; Rehn), and Resistencia nel Chaco, Argentina (Giglio-Tos).

**\*Aleuas vitticollis** Stål.

1878. *A[leuas] vitticollis* Stål, Bihang till K. Svenska Vet.-Akad. Handl., V, No. 4, p. 69. [São ("San") Leopoldo, Rio Grande do Sul, Brazil; Montevideo, Uruguay.]

Misiones. February 24, 1910. One male.

This species has also been recorded from Sapucay, Paraguay (Rehn; Bruner), and Corumbá, Matto Grosso, Brazil (Rehn; Bruner).

**\*Aleuas brachypterus** Bruner.

1906. *Aleuas brachypterus* Bruner, Proc. U. S. Nat. Mus., XXX, p. 667. [Sapucay, Paraguay.]

Misiones. February 2, 1911. (No. 39.) "On water plant." One female.

The only previously known locality for the species was that of the type. It seems very probable to us that this is the female sex of *vitticollis*, the material before us, consisting of four females, differing from *vitticollis* males only in such characters as are sexual, using the term in the sense of known sexual differences in the closely allied *A. gracilis*.

**Aleuas lineatus** Stål.

1878. *A[leuas] lineatus* Stål, Bihang till K. Svenska Vet.-Akad. Handl., V, No. 4, p. 70. [Buenos Aires; Uruguay.]

Caucete, Prov. of San Juan. Elev. 567 meters. January 13, 1909. One male, one female.

San Ignacio, Prov. of Mendoza. Elev. 1,235 meters. April 4, 1908. One male, one female.

These specimens are seen to have longer tegmina and wings than two pairs from Carcaraña, when compared with the same. In the males from Caucete and San Ignacio the tegmina surpass the tips of the caudal femora by very nearly or quite the pronotal length, while in the Carcaraña males the difference is hardly more than half of the same. In the females the discrepancy is less decided, but still quite apparent.

This species is known to range from Sapucay, Paraguay (Bruner),

south to Buenos Aires and Uruguay (Stål), west to San Ignacio, Mendoza and Caucete, San Juan, Argentina.

*Abracris*<sup>41</sup> *nebulosa* (Bruner).

1900. *Jodacris* (?) *nebulosa* Bruner, Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires, p. 67. [Asuncion, Paraguay; Prov. of Tucuman, Argentina.]

Misiones. May 6, 1910. One female.

This species has also been recorded from Corumbá (Bruner), Chapada (Rehn); and Victoria (Bruner), Brazil, Paraguay (Giglio-Tos), and Sapucay, Paraguay (Bruner; Rehn).

\**Abracris* *signatipes* (Bruner).

1906. *Omalotettix signatipes* Bruner, Proc. U. S. Nat. Mus., XXX, p. 673. [Sapucay, Paraguay.]

Misiones. November 9, 1909. One male, four females.

This species has an extensive range to the northward, the present locality constituting its most southerly known limit of distribution.

*Osmiliola aurita* Giglio-Tos.

1897. *O[smiliola] aurita* Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Torino, XII, No. 302, p. 33. [San Lorenzo, Jujuy, Argentina; Caiza, Bolivian Chaco.]

Misiones. September 5, 1909; October, 1910. Two males, one female.

The pair of this species taken October, 1910, were in coitu.

This very interesting species, in addition to the localities given above, has been recorded from Pernambuco, Brazil, and Chapada, Matto Grosso, Brazil, both by Bruner.

*Schistocerca infumata* Seudder.

1899. *Schistocerca infumata* Seudder, Proc. Amer. Acad. Arts and Sci., XXXIV, p. 457. [Montevideo, Uruguay; Brazil.]

Misiones. May 7 and 23, 1910. (No. 15.) Two females.

Posadas, Misiones. Elev. 80 meters. March 3, 1909. Two males.

One of the female individuals is labelled "Common." Bruner says this form, "is quite generally distributed over Argentina and Uruguay along the La Plata River and northward into Brazil." The only definite records aside from those above mentioned are from Sapucay, Paraguay (Rehn; Bruner).

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<sup>41</sup> Bruner's genus *Omalotettix* equals this Walkerian genus, according to Kirby, *Synon. Catal. Orth.*, III, p. 428.

**Sohistocerca paranensis** (Burmeister).

1861. *Acridium paranense* Burmeister, Reise durch La Plata Staat., I, p. 491. [La Plata Region.]

Misiones. December 1, 1910. (No. 1.) "Very common." One male.

Buenos Aires. May 6, 1907. One male, one female.

La Carlota, Prov. of Cordoba. Elev. 142 meters. May 7, 1907. One male.

Alto Pençosa, Prov. of San Luis. Elev. 660 meters. February 2, 1908. One adult female, one immature male, one immature female.

Pedregal, Prov. of Mendoza. Elev. 696 meters. January 3, 1907. One female.

Mendoza, Prov. of Mendoza. Elev. 767 meters. December 12-13, 1907 and 1908. Three males, one female.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. November 28, 1907; December 7-16, 1907. Three males, three females.

The La Carlota individual belongs to the peculiar dwarfed form of the species. The Mendoza and Chacras de Coria series are very pale, similar to spring specimens from Carcaraña received from Bruner.

\* **Atrachelacris olivaceus** (Bruner).

1911. *Dichroplus olivaceus* Bruner, Ann. Carneg. Mus., VIII, p. 133. [Chapada, Matto Grosso, Brazil.]

Misiones. January, 1911; January 12, 1911. (No. 35.) Two males, one female.

This species appears to us to be an *Atrachelacris* and not a *Dichroplus* as described. From *A. unicolor* it differs in the more elongate and distad subfalcate cerci of the male, more compressed form, broader fastigium, broader and distinctly sulcate dorsal section of the frontal costa, shorter and smaller eyes and more mottled greenish coloration. There is no close relationship of this form to *A. gramineus* Bruner.<sup>12</sup>

In addition to the above specimens, we have before us a single female from Sapucay, Paraguay (Hebard Collection), taken January 20, 1905 (Foster). The only difference worthy of note is that in the Sapucay female the fastigium is even wider than in the Misiones female.

The localities from which the species is known are Chapada, Matto Grosso, Brazil, Sapucay, Paraguay, and the Misiones, Argentina.

<sup>12</sup> *Ann. Carneg. Mus.*, VIII, p. 129. This species equals *A. unicolor* Bruner, 1900 (*nec* Giglio-Tos, 1894).

**Dichroplus pratensis** Bruner.

1900. *Dichroplus pratensis* Bruner, Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires, p. 74, figs. 36 and 37. [Provinces of Santa Fé and Buenos Aires, Argentina.]

Buenos Aires. February 20, 1908. One female.

La Carlota, Province of Cordoba. Elev. 142 meters. May 7-9, 1907. Four males.

San Juan, Prov. of San Juan. Elev. 673 meters. January 17,

1909. One female.

Mendoza, Prov. of Mendoza. Elev. 767 meters. March 31, 1908. One female.

San Ignacio, Prov. of Mendoza. Elev. 1,235 meters. March 5-22, 1908; April 5, 1908. Four females.

The Buenos Aires and San Juan individuals are similar in coloration to four specimens from Carcaraña, Argentina, the San Juan female being slightly smaller than the others of that sex. The La Carlota, Mendoza, and San Ignacio representatives are very somberly colored with little contrast in the markings, the general tone varying from broccoli brown to clove brown. The La Carlota specimens have the reduction in contrast more decided than in any of the other individuals, while in size they average larger than the Carcaraña specimens. The females from San Juan and Mendoza Provinces are all slightly or considerably smaller than Carcaraña or Buenos Aires individuals of the same sex.

The localities in Mendoza and San Juan here given constitute the western limit of the range of the species.

**Dichroplus elongatus** Giglio-Tos.

1894. *D[ichroplus] elongatus* Giglio-Tos, Boll. Mus. Zool. Anat. Comp., Torino, IX, No. 184, p. 23. [San Pablo, Province of Tucuman, Argentina; Villa Rica and Asuncion, Paraguay.]

San Juan, Prov. of San Juan. Elev. 673 meters. January 12-22, 1909. Twenty males, nine females.

Caucete, Prov. of San Juan. Elev. 567 meters. January 13 and 17, 1909. Eighteen males, ten females, one immature female.

La Paz, Prov. of Mendoza. Elev. 504 meters. December 19, 1909. One male.

Pedregal, Prov. of Mendoza. Elev. 696 meters. November 20, 1906; December 12, 1906. Two males.

Mendoza, Prov. of Mendoza. Elev. 767 meters. January 3, March 14 and 31, April 24, May 7, 11, and 31, June 5, December 3, 5, and 12, 1908. Eleven males, eleven females.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. Feb-

ruary 7, 1907; March 15 and 16, 1907 and 1908; April 7, 10, and 18, 1907. Five males, two females.

San Ignacio, Prov. of Mendoza. Elev. 1,325 meters. January 15, 1909; March 15 and 22, 1908; April 5, 1908; December 13, 1908. Eleven males, nine females.

Potreros, Prov. of Mendoza. Elev. 1,368 meters. February 23, 1908. One male.

Buenos Aires. May 3, 1907. One female.

This very interesting series of one hundred and eleven specimens shows that considerable variation in size and color is present in the species. Apparently the size variation is more geographic and environmental than individual. The San Juan and Caucete series are very similar in proportions and size, such individual variation in the latter as is noticed being found in both lots. The La Paz, Pedregal, Mendoza, and large portion of the Chacras de Coria and San Ignacio series are uniformly smaller, with shorter tegmina and consequent more robust appearance. Two males and two females from San Ignacio and several males from Chacras de Coria are similar in general form to the San Juan and Caucete lots. A single male from Mendoza is of similar proportions, but the size is no greater than the other Mendoza specimens. Apparently at these three localities the differences are environmental, as they are decided and correlated with color characters. Such differences produced by similar agencies are frequently found in species of the allied North American genus *Melanoplus*.

The first color type, which almost invariably has longer tegmina than the second, is always paler, the base color varying from buff to nearly ochraceous, with the median portion of the dorsum more or less suffused with tawny to chestnut. The postocular bars are always decidedly indicated and the base color of the femora and tibiae in the two forms varies with the general base color. The second type has the base color nearer gamboge and saffron yellow, but little evident, however, as the overlying suffusion of from clove brown to clay color is, as a rule, heavier and more extensive than in the first type, permitting less contrast between the region of the postocular bars and other areas. The females of this latter type are much duller than the male. The dark suffusion of the sharply delimited dorsal two-thirds or so of the external face of the caudal femora varies greatly in intensity, usually more solid and darker in the individuals of the second type.

Representative individuals of both sexes taken at random from the larger series measure as follows:

	San Juan (Type 1).		Caucete (Type 1).	
	Male.	Female.	Male.	Female.
	mm.	mm.	mm.	mm.
Length of body .....	22.5	28.	21.5	25.2
Length of pronotum .....	4.5	6.	4.6	6.
Length of tegmen .....	19.	22.5	18.	21.2
Length of caudal femur .....	11.8	14.7	11.5	14.5

	San Ignacio (Type 1).	
	Male.	Female.
	mm.	mm.
Length of body .....	21.5	28.5
Length of pronotum .....	4.5	6.2
Length of tegmen .....	17.8	22.
Length of caudal femur .....	11.5	15.

	Mendoza (Type 2).		San Ignacio (Type 2).	
	Male.	Female.	Male.	Female.
	mm.	mm.	mm.	mm.
Length of body .....	19.	25.2	21.	26.5
Length of pronotum .....	4.2	5.5	4.5	5.5
Length of tegmen .....	15.5	18.3	15.5	19.
Length of caudal femur .....	10.2	13.	10.5	13.5

This species has been recorded from as far north as Villa Rica and Asuncion, Paraguay, and San Pablo, Tucuman, Argentina, south to the Provinces of Santa Fé, Cordoba, Mendoza, and Buenos Aires, Argentina.

***Dichroplus punctulatus* (Thunberg).**

1824. *Gr[yllus] punctulatus* Thunberg, Mém. l'Acad. Imp. Sci. St. Pétersb., IX, p. 408. [Brazil.]

Misiones. January 5, 1909; February 16, 1910; November 9, 1909; December 2-30, 1909-1910. (Nos. 26 and 33.) Four males, eight females.

Buenos Aires. May 6, 1907. One female.

Los Cisnes, Argentina. May 13, 1907. One female.

This series shows considerable color and size variation, the most striking of which is found in a single female from Misiones, which is distinctly larger than the average of the species and has the proximo-dorsal pale band on the caudal femora and the "hour-glass"-shaped figure on the dorsum of the pronotum cream-buff, in striking contrast to the remainder of the body color.

This widely distributed species ranges south as far as the Rio Negro region of Patagonia.

**Dichroplus conspersus** Bruner.

1900. *Dichroplus conspersus* Bruner, Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires, p. 76, fig. 41. [Southern Santa Fé and eastern Cordoba Provinces, Argentina.]

Buenos Aires. May 3, 1907. One female.

This specimen has been compared with Carcaraña individuals received from Bruner. The localities given above are all known for the species.

**\*Dichroplus dubius** Bruner.

1906. *Dichroplus dubius* Bruner, Proc. U. S. Nat. Mus., XXX, p. 682. [Sapucay, Paraguay.]

Misiones. January 3-14, 1910; December 12, 1910. (No. 9.)  
Two males, two females.

These individuals are found to be inseparable from topotypes. The Misiones and Sapucay, Paraguay, are the only localities known for the species.

**Dichroplus vittatus** Bruner.

1900. *Dichroplus vittatus* Bruner, Sec. Rep. Merch. Locust Invest. Comm. Buenos Aires, p. 77, figs. 43 and 44. [Provinces of Santa Fé, Cordoba, San Luis ("Louis") and Mendoza ("Mendoza"), Argentina.]

San Juan, Prov. of San Juan. Elev. 673 meters. January 16-17, 1909. Three males, two females.

Caucete, Prov. of San Juan. Elev. 567 meters. January 11, 1909. One female.

Mendoza, Prov. of Mendoza. Elev. 767 meters. March 20, April 24, May 1-31, June 12, 1908. Twelve males, four females.

Chaeras de Coria, Prov. of Mendoza. Elev. 936 meters. February 9, April 5 and 7, 1907. One male, two females.

San Ignacio, Prov. of Mendoza. Elev. 1,235 meters. March 23, April 5, 1908. Three males, one female.

Cordillera de Mendoza. March 20, 1908. One male, one female.

We have before us, in addition to the above series, two pairs of typical material from Rosario, received from Bruner. It is evident that the insect varies greatly in size, wholly individually so it appears. The Mendoza series alone contains specimens of both sexes showing this very clearly, the extremes of both sexes measuring as follows: length of body, ♂ 14.3-17.5 mm., ♀ 20-24.2; length of pronotum, ♂ 3.3-4, ♀ 4.2-6; length of tegmen, ♂ 5.2-6.8, ♀ 7-9.2; length of caudal femur, ♂ 8.6-9.5, ♀ 11-13. All of the individuals in the present series are brachypterous.

In color the variation is considerable, but apparently this is almost wholly geographic. The series from Mendoza Province have a more



olive green tone than any of the Caucete or San Juan specimens, which are more yellowish on the pale areas and more contrastingly colored.

The species has been reported from the Provinces of Santa Fé, Cordoba, San Luis, San Juan, and Mendoza, Argentina.

\**Dichroplus brasiliensis* Bruner.

1906. *Dichroplus brasiliensis* Bruner, Proc. U. S. Nat. Mus., XXX, pp. 678, 682. [Victoria, Brazil.]

Misiones. December 14, 1910. (No. 28.) One male.

This specimen measures as follows: length of body, 19.5 mm.; length of pronotum, 4.2; length of tegmen, 16; length of caudal femur, 10.5.

The records of the species are from Victoria (Bruner), São Paulo (Rehn), Espirito Santo (Rehn), Rio de Janeiro (Bruner; Rehn), Brazil and the Misiones.

\**Dichroplus robustulus* Stål.

1878. *P[ezotettix] robustulus* Stål, Bihang till K. Svenska Vet.-Akad. Handl., V, No. 9, p. 7. [São Leopoldo, southern Brazil.]

Misiones. May 6, 1910; April 23, 1909; December 14, 1910. (No. 22.) Three females.

This well-marked species has previously been reported from the localities given above and Chapada, Matto Grosso, Brazil (Bruner).

*Dichroplus bergii* (Stål).

1878. *P[ezotettix] Bergii* Stål, *ibid.*, V, No. 9, p. 6. [Buenos Aires, Paraná, Corrientes, Argentina.]

Misiones. March 15-27, 1909; April 23 and 30, 1910. Four males, ten females.

Posadas, Misiones. Elev. 80 meters. March 6, 1907. Two females.

Buenos Aires. February 20, 1909. Two females.

Mendoza, Prov. of Mendoza. Elev. 767 meters. June 12, 1908. One female.

This species shows considerable variation in size as well as in the intensity of the broad postocular bars. The caudal tibiae of all the Misiones and Mendoza individuals are decided deep glaucous blue, the Buenos Aires specimen agreeing with Rosario and Carcaraña representatives in having these oil green. In the series from Sapucay, Paraguay, previously recorded by us,<sup>43</sup> the color of the tibiae is deep indigo blue in about half of the males and deep oil green in all of the females, the remainder of the males varying in this

<sup>43</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 188.

respect from deep oil green to a paler tone of the same, with one individual having them glaucous green.

This species has been recorded from as far north as Bolivia (Bruner), Province of San Pedro, Paraguay (Giglio-Tos), and Brazil (Bruner), south to Uruguay (Bruner) and Buenos Aires (Stål), west to Mendoza.

\**Leiotettix sanguineus* Bruner.

1906. *Leiotettix sanguineus* Bruner, Proc. U. S. Nat. Mus., XXX, p. 687. [Sapucay, Paraguay.]

Misiones. December 14, 1910. (No. 29.) Two males, one female.

These specimens are smaller than topotypes, which are also before us, although otherwise they are inseparable. A pair of the Misiones individuals measure as follows:

	Male.	Female.
Length of body .....	16.5 mm.	20.2 mm.
Length of pronotum .....	3.5 "	4.5 "
Length of tegmen .....	13.5 "	16.2 "
Length of caudal femur .....	9.2 "	11.3 "

Information with the specimens is to the effect that the species is common. It has only been recorded from Sapucay, Paraguay, Chapada, Matto Grosso, Brazil, and the Misiones, Argentina.

*Leiotettix politus* n. sp.

Type: ♂; Misiones, Argentina. December 12, 1910. (P. Jorgensen, No. 6. [Acad. Nat. Sci. Phila., type No. 5,219.]

Allied to *L. sanguineus* Bruner, but differing in the narrower interspace between the eyes, less protuberant and more ovoid eyes, less regularly rugulose dorsum of the pronotum, the more decided median carina of the same, the decidedly blunt instead of strongly acute prosternal spine, the slender distal portion of the cerci, the more brownish coloration and pale reddish caudal tibiae. There is no close relationship to either *L. flavipes* Bruner or *hastatus* Rehn.

Size small; form moderately compressed. Head with the interspace between the eyes but little more than half the width of the fastigium, moderately expanding caudad; fastigium considerably declivent, distinctly broader than long, rounding into the decidedly retreating face; frontal costa regularly expanding caudad, wider even dorsad than the interspace between the eyes, moderately excavate immediately dorsad and ventrad of the ocellus, dorsal portion strongly punctate;



Fig. 14.—*Leiotettix politus* n. sp. Dorsal outline of head and pronotum of type. (×3.)

eyes broad subovoid, the greatest width about three-fourths of the length, not prominent when viewed from the dorsum; antennæ slightly longer than the head and pronotum together. Pronotum with the greatest dorsal width about two-thirds of the length, the width of the dorsum subequal except for the faintest widening near the caudal margin; cephalic margin truncate, caudal margin obtuse-angulate with the immediate angle broadly rounded; median carina distinct, sharp, but not high; lateral shoulders narrowly rounded; transverse sulci three in number, the caudal one placed slightly caudad of the middle; lateral lobes with the greatest dorsal length greater than the depth, ventral margin broadly obtuse-angulate with the cephalic portion sinuate; surface of the dorsum and lateral lobes, aside from the usual glabrous area on the prozona of the lateral lobes, strongly impresso-punctate, on the dorsum rugulose, the rugæ arranged in a crudely linear fashion on the metazona. Tegmina surpassing the tips of the caudal femora by nearly the length of the head, narrow, the apex completely rounded. Prosternal spine strongly retrorse, blunt conical, nearly in contact with the mesosternal margin; interspace between the mesosternal lobes decidedly longitudinal, the length contained about twice in the width, the margins slightly diverging caudad, the angles well rounded; metasternal lobes in contact for the greater portion of their length, the suture linear. Fureula very minute, subparallel, closely placed, linear lobes; supra-anal plate subtrigonal in general form, the margins rounded, the apex obtuse, proximal half with a well-impressed medio-longitudinal sulcus; cerci falcate, considerably exceeding the supra-anal plate in length, the proximal third broader, sharply narrowing, thence subequal to the tapering, acute distal extremity, when seen from the dorsum the form of the cercus is slightly sigmoid; subgenital plate considerably produced, narrowing, when seen from the side straight except for a slight proximal arcuation, apex blunt, rounded. Caudal femora with their tips very slightly surpassing the apex of the abdomen; caudal tibiæ armed on the external margin with nine spines.

General color russet dorsad, becoming mars brown on the pronotum, ventral surface wax yellow; a pair of more or less distinct subparallel clove brown lines extend from the fastigium caudad to the caudal margin of the dorsum of the pronotum, the area between these on the head wax yellow caudad, on each side a narrow line of



Fig. 15.—*Leiotettix politus* n. sp.  
Lateral outline of apex of abdomen of type. (× 4.)

the same color extends caudad from the eye on the head alone, these cutting off from the dorsal color a broad postocular bar, which is contrasted ventrad with the uniform wax yellow genæ. The latter color also covers the face and the ventral half of the lateral lobes of the pronotum; eyes very pale broccoli brown spotted with clove brown; antennæ pale ochraceous tipped with clove brown. Dorsomedian portion of the lateral lobes of the pronotum with a shining bar of blackish. Ventro-lateral carina of the caudal femoral pagina wax yellow, ventral face of the femora and the caudal tibiæ chinese orange, the spines pale yellow tipped with black; caudal genicular arches black.

*Measurements.*

Length of body.....	18. mm.
Length of pronotum.....	4. "
Length of tegmen.....	15.3 "
Length of caudal femur.....	10.2 "

In addition to the type, we have before us a paratypic male which shows no important differences from the type. A label with the material states that the species is "very common."

*Leiotettix pulcher* n. sp.

Type: ♂; Misiones, Argentina. December 12, 1910. (P. Jorgensen, No. 5.) [Acad. Nat. Sci. Phila., type No. 5,222.]

Closer to *L. hastatus* Rehn<sup>44</sup> than to any other species of the genus, but differing from that in the smaller size, distinctly narrower and less declivent fastigium, which is also more decidedly excavate, the more compressed pronotum, more angulate caudal margin of the disk of the pronotum, the different sculpture of the supra-anal plate, in the more elongate cerci, which are subfalcate distad, and in the less produced subgenital plate. The color of the caudal tibiæ immediately separates this species from *flavipes* Bruner, but in addition to that the present species can be distinguished by the narrower distal section of the cerci, shorter subgenital plate, and less declivent and more excavate fastigium. The female is very similar to that sex of *flavipes*, but the pronotum is more constricted, with the caudal margin of the lateral lobes straighter and more vertical, and the tibiæ are red.

Size medium; form rather slender. Head with the occiput very slightly arcuate; interocular space broad, hardly narrower than the greatest width of the fastigium and approximately equal to half of

<sup>44</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 189, fig. 13. [Sapucay, Paraguay.]

the width of one of the eyes; fastigium moderately declivent, rounding into the frontal costa, considerably excavate; frontal costa broad, nearly as wide as the interspace between the eyes, slightly narrowing dorsad, subequal from slightly dorsad of the insertion of the antennæ ventrad, broadly and deeply sulcate from slightly dorsad of the ocellus, dorsal portion impresso-punctate; face considerably retreating; eyes ovoid, not very prominent, distinctly longer than the infra-ocular portion of the sulcus; antennæ slightly exceeding the length of the head and pronotum combined. Pronotum very appreciably constricted mesad; dorsum with the cephalic margin arcuato-truncate, caudal margin very broadly obtuse-angulate with the immediate angle subtruncate and the lateral portions of the angles slightly sinuate, greatest caudal width of the disk contained about one and one-half times in the length of the same; lateral angles narrowly rounded, more decided on the metazona than on the prozona; median carina very weak on the prozona,

moderately elevated on the metazona; principal transverse sulcus placed very slightly caudad of the middle; lateral lobes slightly longer than deep, ventral margin decidedly obtuse-angulate mesad. Tegmina very slightly surpassing the tips of the caudal femora, subequal in width for the greater part of their length, apex rotundato-truncate. Prosternal spine conical, erect; interspace between the mesosternal lobes strongly longitudinal, the width contained nearly twice in the length, internal margins of the lobes slightly arcuate, caudal angle hardly rounded; metasternal lobes contiguous. Furcula very short, contiguous, spiniform; supra-anal plate crudely semi-ovate in outline, the apex obtuse-angulate, laterad of which on each side is placed another very slight angulation, proximal two-thirds of the plate with a distinct median sulcus bounded laterad by considerably elevated carinæ, remainder of the plate appreciably excavate; cerci surpassing the apex of the supra-anal plate, considerably tapering in the proximal half, thence subfalciiform and slightly excavate mesad on the external face, when seen from the dorsum they are moderately in-bowed in a sigmoid fashion; subgenital plate moderately produced, the marginal length subequal to the proximal width, margin slightly arcuate when seen from the side, form of the elevated margin when seen from the dorsum semi-elliptical, the apex not



Fig. 16.—*Leiolettix pulcher* n. sp. Dorsal outline of head and pronotum of type. (X 3.)



Fig. 17.—*Leiolettix pulcher* n. sp. Lateral outline of apex of abdomen of type. (X 4.)

marginal, the true apex bluntly tuberculate. Cephalic and median femora slightly inflated. Caudal femora slender; caudal tibiæ armed on the external margin with nine spines.

General color of the dorsum prout's brown, passing on the tegmina into pale raw umber. Head with the face bice green, passing into apple green on the genæ; a broad postocular bar greenish-black, margined dorsad by a narrow area of yellowish; eyes tawny-olive; antennæ prout's brown. Postocular bar continued over the lateral lobes of the pronotum, becoming obsolete on the metazona, the dorsal portion of the bar decidedly greenish, ventral portion black, remainder of lateral lobes ecru drab cephalad, greenish caudad. Cephalic and median limbs between oil and bice green in color, lined more or less with black. Caudal femora oil green dorsad, external face citron yellow ventrad, genicular arched black; caudal tibiæ and tarsi pale coral red, spines salmon at base, distad tipped with black.

Allotype: ♀; data similar to that of the type.

Differing from the male sex in the following important characters: Size moderately large; form moderately robust. Interspace between the eyes about equal to three-fourths the width of one of the eyes; fastigium shallowly excavate; frontal costa broad, very faintly expanding caudad, excavate only in the vicinity of the ocellus; eye more reniform than ovate. Interspace between the mesosternal lobes contained about one and one-half times in the length of the same; metasternal lobes but slightly separated caudad. Coloration very similar to that of the male, but the dorsal color is more hazel than prout's brown.

#### Measurements.

	Type (male).	Allotype (female).
Length of body .....	20. mm.	25.8 mm.
Length of pronotum .....	4.6 "	6. "
Length of tegmen .....	16. "	19.3 "
Length of caudal femur.....	11.2 "	14.5 "

In addition to the type and allotype, we have before us two paratyptic males. These males fully agree with the type, and the differential characters of the female sex are given above. A label with the specimens tells us they are "very common."

*Paradichroplus nigrigena* n. sp.

Type: ♂; Misiones, Argentina. May 1, 1909. (P. Jorgensen.)  
[Acad. Nat. Sci. Phila., type No. 5,220.]

A very peculiar species which seems to be closer to *P. bilobus* and

*brunneri* Giglio-Tos than to any of the other forms of the genus. From the former it can be immediately separated by the absence of decided lobiform furcula, while from the latter it can readily be distinguished by the heavier, deeper head, the more vertical face, the more elongate supra-anal plate, the more tapering and strongly incurved cerci, the less produced subgenital plate and very different coloration.

Size medium; form robust. Head not elevated dorsad of the level of the pronotum, the interocular region and the fastigium regularly declivent; interocular width moderate, slightly greater than the interantennal width of the frontal costa, hardly more than a third the width of the eye; fastigium distinctly transverse, margins distinct and rectangulate, surface of the fastigium and the interocular portion of the vertex very slightly excavate; face moderately retreating, subvertical for a very short distance dorsad, forming a slight obtuse angle at the junction with the fastigium; frontal costa in general subequal in width, the average breadth slightly less than that of the interocular portion of the vertex, strongly narrowing dorsad to the junction with the fastigium, slightly narrowed immediately ventrad of the ocellus, sulcate throughout; antennæ about two and one-half times the length of the pronotum; eye not at all prominent when seen from above, in outline reniform-ovate, the infra-ocular portion of the genæ about two-thirds the length of the eye. Pronotum roughly semicylindrical, the dorsum regularly rounding into the lateral lobes, no shoulders present but a very brief



Fig. 18.—*Paradiachroplis nigrigena* n. sp. Dorsal outline of apex of abdomen of type. ( $\times 4$ .)



Fig. 19.—*Paradiachroplis nigrigena* n. sp. Lateral outline of apex of abdomen of type. ( $\times 4$ .)

carina indicated cephalad on each side; cephalic margin arcuate with the faintest possible median emargination, caudal margin very broadly but decidedly emarginate; median carina faintly indicated, but continuous; prozona twice as long as the metazona; lateral lobes decidedly longitudinal, the depth contained nearly twice in the length, ventral margin obtuse-angulate mesad; surface of the metazona strongly punctate when compared with the prozona. Tegmina linear, hardly equal to the length of the pronotum, very

slightly expanding distad, the greatest width contained slightly more than three times in the length, apex rounded. Prosternal spine stout, erect, conical, blunt; interspace between the mesosternal lobes distinctly but not greatly transverse, internal margins of the lobes well rounded; metasternal lobes subcontiguous caudad. Abdominal segments with a distinct median longitudinal carina; furcula present as very brief trigonal acute subcontiguous fingers; supra-anal plate trigonal, the margins regularly converging, the apex acute, sulcate mesad for the entire length of the plate, a pair of deeper and broader converging lateral depressions separated from the median sulcation by low ridges; cerci slightly exceeding the supra-anal plate in length, styliiform, the base broad, thence regularly narrowing to the blunt apex, the narrowing being wholly due to the oblique excision of the ventral margin, the dorsal margin being straight, when seen from the dorsum the distal two-thirds of the cercus is regularly incurved; subgenital plate broad, the proximal width considerably exceeding the length of the lateral margin, when seen from the side the lateral margin is straight, when seen from the dorsum the margins are seen to be converging at an acute angle, the apex slightly produced and labiate. Cephalic and median femora considerably inflated and bowed. Caudal femora about two and one-half times as long as the pronotum, rather slender; caudal tibiae armed on the external margin with nine spines.

General color of the dorsum prout's brown. Head with the face and cephalic portion of the genæ tawny-olive, remainder of the genæ shining seal brown, partially separated from a postocular area of the same color by a blotch of naples yellow, the postocular section being bordered dorsad by a narrow edging of the same yellow; eyes ochraceous; antennæ ochraceous-rufous. Pronotum with a distinct subequal arcuate postocular bar of shining seal brown, the dorsal margin of which is weakened and poorly defined; ventral portion of the lateral lobes naples yellow, sharply delimited dorsad and with a ventral marginal edging of seal brown. Tergmina bistre with a very narrow marginal line of naples yellow dorsad. Venter of the thorax and abdomen cinnamon, this color covering most of the apex of the abdomen; lateral bars on the abdomen bistre, prominent proximad on the abdomen and becoming obsolete about the middle of the same. Pleura dark bistre with two spots of naples yellow, one of which is a continuation of the ventral yellow section of the lateral lobes. Cephalic and median limbs pale oil green, becoming yellowish proximad on the femora. Caudal femora oil green on the lateral



face, the dorsal, ventral and internal faces gamboge yellow, the distal extremity almost wholly blackish with a very weak whitish edging to the genicular lobes; caudal tibiæ glaucous blue, the spines cream at the base and tipped with black.

*Measurements.*

Length of body.....	18.	mm.
Length of pronotum.....	4.2	"
Length of tegmen.....	3.6	"
Length of caudal femur.....	11.2	"

The type of this interesting species is unique.

*Osmilia violacea* (Thunberg).

1824. *Gr[yllus] violaceus* Thunberg, Mém. l'Acad. Imp. Sci. St. Pétersb., IX, p. 413. [Brazil.]

Misiones. March 18-29, 1909-1910; April 5 and 12, 1909; September 1-11, 1910; October 1, 1910; December 12, 1908. (Nos. 16 and 31.) Eight males, seven females.

Information with this material is to the effect that the species is "common in forest."

The range of this form has not been clearly defined, owing to considerable confusion with other species of the genus, but in Argentina it has also been reported from San Lorenzo, Jujuy (Giglio-Tos), Chaco (Bruner) and Tucuman (Bruner).

Family **TETTIGONIDÆ.**

Subfamily PHANEROPTERINÆ.

\**Tetana grisea* Brunner.

1878. *T[etana] grisea* Brunner, Monogr. der Phaneropt., p. 120, pl. II, fig. 20A-B. [Chile.]

Alto Pencosa, Prov. of San Luis. Elev. 660 meters. December 20-22, 1908. Two males.

San Juan, Prov. of San Juan. Elev. 673 meters. January 20, 1909. One male.

These specimens are referred to this species with some little doubt, as the fastigium is more or less sulcate and the generic description of *Tetana* says "non sulcato." The tegmina also appear slightly longer proportionately than in the figure, but the length measurements are in accord with those given by Brunner. It is also possible that the individuals from Alto Pencosa are distinct from that from San Juan, but the differences noted are probably individual.

## BURGILIS Stål.

This hitherto monospecific genus is represented in the present series by three species, none of which are the same as the type species—*B. curta* (Serville). The following key will assist in the determination of the four species now known.

- A.—Ovipositor of female nearly straight.....*curta* (Serville).  
 AA.—Ovipositor of female distinctly curved.  
 B.—Ovipositor distinctly exceeding the cephalic femora in length.  
     Exposed portion of wings of male very slender, the depth contained over four times in the length of same.....*mendosensis* n. sp.  
 BB.—Ovipositor subequal to the cephalic femora in length. Exposed portion of wings of male less slender, the depth contained less than four times in the length of same.  
 C.—Tegmina tapering distad; marginal field suddenly narrowed mesad. Costal margin of male tegmina markedly white mesad.....*grandis* n. sp.  
 CC.—Tegmina tapering gradually distad; marginal field not suddenly narrowed mesad. Costal margin of male tegmina not white mesad.....*missionum* n. sp.

***Burgilis mendosensis* n. sp.**

Type: ♀; Potrerillos, Prov. of Mendoza, Argentina. Elev. 1,368 meters. December 26, 1907. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,221.]

The larger ovipositor of this species readily separates it from the other forms before us. In the male the very narrow exposed portion of the wings is sufficiently diagnostic to immediately separate the form.

Size medium; form subcompressed. Head with the fastigium of the vertex hardly wider than half of the proximal antennal joint, moderately declivent, moderately constricted mesad, rather bulbous distad, sulcate; facial fastigium slightly broader than that of the vertex, almost touching the same; antennæ about twice the length of the body; eye moderately prominent, subovate, of medium size. Pronotum with the dorsum deplanate, very faintly concave cephalo-caudad, the width of the dorsum subequal and contained one and one-half times in the pronotal length; cephalic margin faintly arcuato-emarginate, caudal margin arcuate,



Fig. 20.—*Burgilis mendosensis* n. sp. Outline of ovipositor of type. (× 3.)

lateral angles continuous and distinct, most decided caudad, where they are very slightly diverging; lateral lobes with the depth con-

tained one and one-half times in the length, ventral margin arcuato-emarginate dorsad of the coxæ, ventro-caudal angle and caudal margin broadly rounded, humeral sinus acute-angulate incised. Tegmina two and two-thirds times as long as the head and pronotum, acute lanceolate, the greatest width in the proximal half, distad of which the tegmina taper to the narrowly rounded apex; marginal field in the proximal third of the tegmina but little narrower than the width of the discoidal field in the same region, thence rather abruptly narrowing to slightly distad of the middle of the tegmina where the marginal field becomes non-existent; median vein diverging at the middle of the tegmen and reaching the sutural margin of the tegmen, simple; discoidal vein with a single complete ramus which follows the median vein in trend. Wings with their exposed portion slightly longer than half of the tegminal length, narrow, gently tapering to the very acute apex. Cephalic tibiæ with the dorso-caudal margin with four spines aside from the apical one, dorso-cephalic margin unarmed. Median tibiæ with all of the margins armed, the dorso-cephalic with fewer spines than the others. Caudal femora subequal to the length of the wings, unarmed ventrad. Ovipositor slightly longer than the head and pronotum together, gently arcuate, moderately robust, tapering, apex acute, ventral margin slightly flattened in the proximal half, dorsal margin serrato-dentate for two-thirds of its length, ventral margin more weakly serrato-dentate for half of its length, surface of the ovipositor except on the swollen proximal portion scabroso-dentate; subgenital plate trigonal with the distal extremity of the margin narrowly truncate.

General color clay color, except the tegmina, exposed portion of wings, distal two-thirds of the ovipositor and almost all of the tibiæ which are apple green. It is probable that apple green is the general natural coloration. Eyes burnt umber. Tegmina with a brief edging on the costal margin and a longer one on the sutural margin buff.

Allotype: ♂; Potrerillos, Province of Mendoza, Argentina. Elev. 1,368 meters. January 20, 1907. (P. Jorgensen.) [Acad. Nat. Sci. Phila.]

The following characters are those of difference from the female sex:

Size rather small. Tegmina with the tympanum having the length slightly greater than the width, the apex of the stridulating vein roundly projecting beyond the general arcuation of the tympanal margin. Exposed portion of the wings two-thirds as long as the

tegmina. Cerci simple, tapering in the proximal two-thirds, straight, distal third regularly falcate inward, the same portion subdepressed, the apex spiniform and slightly turned dorsad; subgenital plate moderately produced, the margin of the same deeply arcuato-emarginate, no styles present.

Color in general similar to that of the type, but the pleura, lateral lobes of the pronotum, and the base of the limbs cream-buff, the tibiæ tawny (the cephalic almost liver brown), and the proximal portion of the tegmina of the general color. Tegmina with no pale sutural edging, the posterior ulnar vein lined with chestnut distad from the apical portion of the tympanum.

*Measurements.*

	Type (female).	Allotype (male).
Length of body.....	20.7 mm.	15.3 mm.
Length of pronotum.....	4.2 "	3.5 "
Length of tegmen.....	18.5 "	15.5 "
Greatest width of tegmen.....	4. "	3.5 "
Length of exposed portion of wing.....	10. "	9.2 "
Length of caudal femur.....	24.5 "	20.2 "
Length of ovipositor.....	8. "	

In addition to the type and allotype, we have before us a pair from the type locality (January 29, 1907; December 27, 1907) and a single female from San Ignacio, Province of Mendoza (March 22, 1908). The additional Potrerillos female is slightly smaller than the type, the San Ignacio female distinctly smaller, but otherwise they are inseparable.

*Burgilis grandis* n. sp.

Type: ♀; Jujuy, Prov. of Jujuy, Argentina. April, 1911. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,223.]

The combination of small ovipositor and decidedly tapering teg-



Fig. 21.—*Burgilis grandis* n. sp. Outline of ovipositor of type. (× 3.)

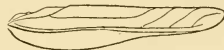


Fig. 22.—*Burgilis grandis* n. sp. Outline of tegmen of male allotype. (× 2.)

mina are diagnostic of this species, the character of the marginal field of the male tegmina also being very distinctive.

Size medium; form little compressed. Head with the fastigium

narrower than in *B. mendocensis*, but narrower and less decidedly sulcate; frontal fastigium similar to that of *mendocensis*; eyes ovate, moderately prominent. Pronotum similar to that of *mendocensis*, but with the sinuation of the ventral margin less decided and the humeral sinus subrectangulate. Tegmina about three times as long as the head and pronotum combined, the general form similar to that of *mendocensis*, but the marginal field is slightly broader and the discoidal vein has two distinct rami. Exposed portion of the wings twice the length of the pronotum, apex slightly less acute than in *mendocensis*. Cephalic tibiæ with five to six spines on the dorso-cephalic margin. Ovipositor subequal to the head and pronotum together in length, well arcuate, tapering, the dorsal margin serrato-dentate on the distal half, irregularly serrulate on the proximal half, ventral margin crenulato-serrate distad, becoming weakly crenulate proximad, the surface of the ovipositor scabroso-dentate, subgenital plate broad trigonal with the distal margin rounded.

General coloration essentially the same as that of *mendocensis*, but the tegmina have no buff edging and the dorsum of the head has traces of maroon purple linings and the humeral angles of the pronotum have broken lines of the same color.

Allotype: ♂; Jujuy, Province of Jujuy, Argentina. April, 1911. (P. Jorgensen.) [Acad. Nat. Sci. Phila.]

The following characters are those of difference from the female sex:

Marginal field of the tegmina very broad, subequal to the breadth of the adjacent portion of the discoidal field; the narrowed distal portion of the tegmina slightly broader than in the female; tympanum with the length nearly twice the width, speculum more regularly narrowing caudad than in *mendocensis*. Cerci similar to those of *mendocensis*, but shorter and less robust; subgenital plate with the distal extremity somewhat wider than in *mendocensis*.

General color similar to that previously described with the following additions: dorsum of the head and pronotum and the dorsal portion of the lateral lobes of the pronotum finely sprinkled with maroon purple, the antennæ strongly washed with the same; tegmina with the extreme proximal portion of the discoidal field washed with olive green, the tympanal curve of the posterior ulnar vein, the speculum and the adjacent portion of the tympanum seal brown; remainder of the anal field of the tegmina olive-yellow; marginal field of the tegmina with a broad cream colored margin.

## Measurements.

	Type (female).	Allotype (male).
Length of body.....	20. mm.	14. mm.
Length of pronotum.....	4. "	3.3 "
Length of tegmen.....	18.5 "	18. "
Greatest width of tegmen.....	4.3 "	4.5 "
Length of exposed portion of wing.....	7.4 "	9.8 "
Length of caudal femur.....	23.5 "	20.5 "
Length of ovipositor.....	5.8 "	

The type and allotype described above are all of the species seen by us.

***Burgilis missionum* n. sp.**

Type: ♀; Misiones, Argentina. December, 1911. (P. Jorgensen, No. 5.) [Acad. Nat. Sci. Phila., type No. 5,224.]

The short ovipositor and gradually tapering tegmina, which have the marginal field not sharply narrowed and unmarked with white, will readily separate this species.

Size medium; form little compressed. Head with the fastigium slightly narrower than in *grandis* and more distinctly sulcate, hardly bulbous at the extremity; frontal fastigium narrower than in the other species examined; eyes ovate. Pronotum of the form of the other species, but shorter; lateral lobes with the depth contained one and a third times in the length of the same, ventro-caudal angle of the same obliquely subtruncate, humeral sinus rectangularly incised. Tegmina three and one-half times as long as the head and pronotum, regularly and not at all strongly tapering distad; marginal field with its greatest width distinctly less than that of the adjacent portion of



Fig. 23.—*Burgilis missionum* n. sp.  
Outline of ovipositor of type.  
(× 3.)

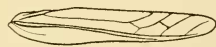


Fig. 24.—*Burgilis missionum* n. sp.  
Outline of tegmen of male allotype.  
(× 2.)

the discoidal field, regularly narrowing from the proximal third of the tegmen to near the apex, without any decided point of excision; apex obliquely subtruncate; median vein similar to that of the other species of the genus; discoidal vein with three well-marked rami, all reaching the sutural margin of the tegmen, the distal one practically at the apex. Exposed portion of the wings about half the length of the tegmina, the apex acute. Cephalic tibiae with four spines on the dorso-caudal margin aside from the distal spine. Caudal femora

slightly surpassing the tegmina in length. Ovipositor subequal to the head and pronotum in length, arcuate, slightly tapering, distal half of the dorsal margin serrato-dentate, ventral margin crenulato-dentate for almost the entire length, surface of the ovipositor scabroso-dentate except on the swollen proximal portion; subgenital plate trigonal with the distal margin very narrowly emarginato-truncate mesad.

General color pale clay color, the exposed portion of the wings, distal half of the tegmina, anal field of the same, and all or part of the tibiæ apple green. We presume apple green was the color of the whole insect in life. Eyes burnt amber.

Allotype: ♂; Misiones, Argentina. December 14, 1910. (P. Jorgensen.) [Acad. Nat. Sci. Phila.]

The characters here given are those of difference from the female.

Tympanum of the tegmina very similar in form to that of *B. grandis*, but proportionately smaller; discoidal vein occasionally (on one tegmen) with but two rami toward the sutural margin. Cephalic tibiæ occasionally with six spines on the dorso-caudal margin in addition to the distal one. Cerci more elongate than in the other species of the genus, the form nearer that found in *mendo-censis*, but slenderer, the distal extremity less depressed and slightly more spiniform; subgenital plate arcuato-emarginate distad, flanked laterad by brief styliform processes.

General color sulphur yellow on the head and pronotum, passing into buff on the abdomen, tegmina and wings pale apple green, the limbs more or less washed with the same color. Tegmina with the marginal field unicolor; anal field with the tympanum and the longitudinal area adjacent to it more or less uniformly prout's brown. Eyes russet.

#### Measurements.

	Type (female).	Allotype (male).
Length of body.....	16.5 mm.	14.5 mm.
Length of pronotum.....	3.8 "	3.3 "
Length of tegmen.....	21.3 "	17.5 "
Greatest width of tegmen.....	4.1 "	3.8 "
Length of exposed portion of wing.....	10. "	8.3 "
Length of caudal femur.....	23. "	20.5 "
Length of ovipositor.....	6. "	

In addition to the type and allotype, we have before us two paratypic males taken January 12, 1910, and December 12, 1909. These specimens show no noteworthy differences from the allotype. Infor-

mation with the specimens is to the effect that the species is "very common."

\* *Aniara proxima* Brunner.

1891. *Aniara proxima* Brunner, Verhandl. K. K. Zool.-bot. Gesellsch. Wien, XLI, p. 58. [Lages, Santa Catharina, Brazil.]

Misiones. November, 1910. (No. 9.) One male.

This specimen fully agrees with the original description except that it is of larger size. The dimensions are as follows:

Length of body.....	21.	mm.
Length of pronotum.....	4.8	"
Length of tegmen.....	30.5	"
Width of tegmen at proximal third.....	5.8	"
Length of caudal femur.....	19.	"

The species has also been recorded with a query from Sapucay, Paraguay, by Caudell.

*Hyperophora brasiliensis* Brunner.

1878. *Hyperophora brasiliensis* Brunner, Monogr. der Phaneropt., p. 126. [Brazil.]

Posadas, Misiones. Elev. 80 meters. March 6, 1909. One male.

Misiones. April 30, 1909; December 12, 1909. Two males.

These specimens are slightly smaller than individuals from Sapucay, Paraguay, but otherwise inseparable.

This species has been recorded from Brazil (Brunner), Sapucay (Caudell; Rehn) and Prov. of San Pedro (Giglio-Tos), Paraguay, and Buenos Aires, Argentina (Giglio-Tos).

*Hyperophora angustipennis* Brunner.

1891. *Hyperophora angustipennis* Brunner, Verhandl. K. K. Zool.-bot. Gesellsch. Wien, XLI, p. 59. [Cordoba, Argentine Republic.]

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. March 13, 1907. One male.

This beautiful species has only been recorded from Cordoba, Santa Rosa, Salta (Giglio-Tos), and Chacras de Coria.<sup>45</sup>

*Hyperophora major* Brunner.

1878. *Hyperophora major* Brunner, Monogr. der Phaneropt., p. 126, pl. II, fig. 24a-b. [Buenos Aires.]

Misiones. December 12, 1909. One female.

Corrientes, Prov. of Corrientes. Elev. 76 meters. March 3, 1909. One male.

<sup>45</sup> The record of this species from Sapucay, Paraguay, by the author (*Ent. News*, XVI, p. 42) is erroneous, as a re-examination of the material shows it to belong to *H. minor*, a species then unknown to him.



Embarcacion, Prov. of Salta. April, 1911. One female.

Jujuy, Prov. of Jujuy. April, 1911. Two males.

Pedregal, Prov. of Mendoza. Elev. 696 meters. December 1-19, 1906. Two males, one female.

Mendoza, Prov. of Mendoza. Elev. 767 meters. February 5, 1909. One male.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 1 and 11, 1908; February 26, 1908; April 7 and 24, 1907. Three males, one female, one immature male.

Potrerillos, Prov. of Mendoza. Elev. 1,368 meters. February 22, 1909. One female.

This series shows very considerable variation in size and coloration. In size, the only specimen equalling individuals from Sapucay, Paraguay, previously measured<sup>46</sup> is the single female from the Misiones, all the other representatives being slightly or considerably smaller. In color, green is the predominating shade, but individuals with buff the base color are from Potrerillos, Mendoza, Chacras de Coria, and Corrientes, while two Jujuy females are much darker, their base tone being clay color. In all of the brownish individuals the infuscation of the dorsal section of the lateral lobes of the pronotum and the continuation of the same marking distad over the tegmina, margining the tympanum, and the anal field of the same, is more or less decided and umber in color. In the Jujuy individuals these areas are very strongly indicated, the tegmina also being decidedly maculate on the discoidal field with the same shade. This latter condition is suggested in certain of the buffy specimens.

The species has also been recorded from Buenos Aires (Bruner) and Santa Rosa, Salta (Giglio-Tos), Argentina, and Sapucay, Paraguay (Rehn).

**CALLINSARA**<sup>47</sup> n. gen.

A member of the *Insare* (*Hormilie* of authors) and related to *Insara* Walker (*Hormilia* Stål and authors), from which it can immediately be distinguished by the acuminate fastigium of the vertex, which also is not in contact with the frontal fastigium, the short bispinose genicular lobes of the caudal femora and the non-dilated abdominal segments which have their dorsal margins not produced mesad.

Fastigium acuminate, sulcate, carinate ventrad, separated from

<sup>46</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 373.

<sup>47</sup> *Kαλλος*, beautiful—*Insara*.

the frontal fastigium; eyes globose, prominent. Pronotum subsellate, dorsum expanding caudad, lateral angles more or less indicated; lateral lobes roughly quadrate, sublongitudinal. Tegmina elongate-lanceolate, costal and sutural margins subparallel, apex rounded; median vein simple, reaching the sutural margin, discoidal vein with three rami similar to the median vein; anterior ulnar vein with numerous oblique subparallel rami similar in form to the median vein and the rami of the discoidal vein. Femora with the genicular margins non-produced meso-dorsad. Tympanum of the cephalic tibiae open on both faces. Caudal femora elongate, armed beneath on both margins, genicular lobes brief, bispinose.

Type.—*C. clupeipennis* n. sp.

*Callinsara clupeipennis*<sup>48</sup> n. sp.

Type: ♂; Misiones, Argentina. December 30, 1910. (P. Jorgensen; No. 13.) [Acad. Nat. Sci. Phila., type No. 5,227.]

Size medium; form subcompressed. Head with the base of the fastigium horizontal, thence moderately declivent, lateral margin moderately elevated, the apex rounded when seen from the side,

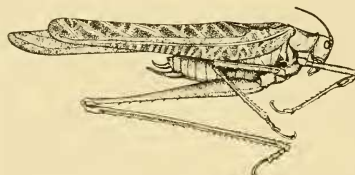


Fig. 25.—*Callinsara clupeipennis* n. gen. and sp. Lateral view of type. ( $\times 1\frac{1}{2}$ .)

sublamellate ventrad; fastigium of face very broad, rounded, well separated from that of the vertex; eyes very prominent; face with strumose ridges distributed as follows: a brief postocular one, an oblique one from the ventral portion of the eye to the ventro-caudal angle of the gena and continued thence dorsad along the caudal margin of the gena half-way to the postocular bar, oblique line from the fastigium of the face to the corner of the clypeus and finally ridges outlining the clypeus dorsad and laterad. Pronotum appreciably sellate, the cephalic margin not at all greatly but sharply elevated, caudal portion gradually and slightly elevated; dorsum with the greatest caudal width contained one and one-quarter times

<sup>48</sup> *Clupea*, herring; *pennis*, wing—in allusion to the "herring-bone" color pattern.

in the length of the same; lateral angles indicated by callous ridges similar to those on the head, sinuate on the cephalic half, considerably diverging caudad, distinct but not at all strong humeral shoulders developed caudad, a very fine medio-longitudinal sulcus present on the dorsum; cephalic margin very slightly arcuato-emarginate, caudal margin considerably arcuate; lateral lobes with the greatest depth contained one and one-third times in the length of the same, ventral margin sinuato-arcuate, ventro-caudal angle subtruncate, humeral sinus rotundato-rectangulate. Tegmina about one and one-half times as long as the body, greatest width of the marginal and discoidal fields contained about six times in the tegminal length, the width gradually narrowing to the middle, thence subequal to the well-rounded apex; marginal field with its greatest width at the proximal third, where it is but little narrower than the adjacent portion of the discoidal field, gradually narrowing thence to practically the apex; costal transverse nervures near the base of the marginal field forked, simple distad, all subcallose, oblique; median vein diverging distinctly distad of the middle of the discoidal vein, short, sinuate, oblique, reaching the sutural margin; rami of the discoidal vein three in number, similar to the median vein in form, length, and direction, two reaching the sutural margin, the third reaching the apex; anterior ulnar vein with five veins similar to the others of the discoidal field in character and direction, the anterior ulnar vein far removed from the posterior ulnar vein and close to and subparallel with the discoidal vein; tympanum with the stridulating vein very strong, slightly oblique, speculum trigonal, the margin little produced at the apex of the stridulating vein. Exposed portion of the wings slightly longer than the pronotum, sutural margin straight, costal margin rounding to the apex which is sutural in position. Lobes of the mesosternum and metasternum broadly rounded. Disto-dorsal abdominal segment produced, truncate, considerably emarginate laterad at the bases of the cerci; supra-anal plate slightly elongate, trigonal, the apex well rounded;



Fig. 26.—*Callinsara clupeiennis* n. gen. and sp. Dorsal outline of head and pronotum of type. (× 3.)



Fig. 27.—*Callinsara clupeiennis* n. gen. and sp. Genicular region of caudal limb of type. (× 3.)



Fig. 28.—*Callinsara clupeiennis* n. gen. and sp. Dorsal outline of apex of abdomen of type. (× 3.)

cerci simple, tapering, slightly bent near the middle, thence incurved, apex acute, spined; subgenital plate greatly produced, narrowing distad, distal margin deeply arcuato-angulate emarginate, supplied with rather short, distinct styles. Cephalic femora with two to three spines on the ventro-cephalic margin and a single spine on the ventro-caudal one; dorso-caudal margin of the cephalic tibiæ with five spines, one of which is placed on the proximal dilation and the other at the distal extremity, dorso-cephalic margin with only the single distal spine or another additional one. Median femora with three or four spines on the ventro-cephalic margin and one or two on the ventro-caudal one. Caudal femora about three-fourths the length of the tegmina, very slender, ventral margins with seven spines on each, placed on little more than the distal half, genicular lobes bluntly acute, not surpassing the dorsum of the femoral apex; bispinose; caudal tibiæ appreciably exceeding the femora in length, all of the margins armed, the dorsal more thickly so than the ventral ones.

General color oil green passing into clay color on the pleura and abdomen. Head with the frontal fastigium, the base of the labrum and the above-described strumose ridges cream color; eyes cinnamon; antennæ washed with saffron yellow. Pronotum faintly washed with chrome yellow, median sulcation and the lateral angles dull cream color, the latter margined ventro-cephalad and ventro-caudad with ochraceous. Tegmina with a faint ochraceous tinge at the base of the humeral trunk; principal longitudinal veins whitish, the transverse veins of the marginal field, the rami of the anterior ulnar vein, the median vein and the rami of the discoidal vein similarly colored, on the marginal field the direct rami of the costales also are similarly colored, the rami of the anterior ulnar vein having their secondary ramifications for a very short distance each side of the main rami also whitish, while the median vein and the rami of the discoidal vein have this more extensive, involving the whole of certain of the minor ramifications, the entire pattern being very decided. Exposed portion of the wings with the principal veins whitish in the same fashion as on the tegmina. Spines on the femora black.

*Measurements.*

Length of body.....	16.3 mm.
Length of pronotum.....	3.7 "
Greatest dorsal width of pronotum.....	3. "
Length of tegmen.....	27. "
Greatest width of tegmen.....	4.5 "
Length of caudal femur.....	20. "

The type of this most interesting genus and species is unique.

**Ligocatinus spinatus** (Brunner).

1878. *A[maura] spinata* Brunner, Monogr. der Phaneropt., p. 248, pl. V, fig. 74a-b. [Buenos Aires.]

Buenos Aires. February 26, 1909. Three females.

This species has been recorded from Caiza, Bolivian Chaco, San Lorenzo, Jujuy, and Buenos Aires, Argentina. We also have before us a pair from Rosario, Argentina, collected by Bruner.

**\*Ligocatinus olivaceus** (Brunner).

1891. *Amaura olivacea* Brunner, Verhandl. K.-K. Zool.-bot. Gesell., XLI, p. 123. [Rio Grande do Sul, Brazil.]

Misiones. February 1, 1910; March 20, 1909. Two females.

It seems probable that *L. borrellii* Giglio-Tos<sup>49</sup> is either a synonym of the present species or certain of its supposed diagnostic characters are not constant, such as the black median line on the dorsum of the abdomen, which is strongly indicated in most of the specimens (five in all) before us and almost completely absent in one. The character of insertion of the lateral lobes of the pronotum is susceptible of much latitude in individual interpretation, while the length of the ovipositor and degree of angulation of the subgenital plate are not hard-and-fast characters, as in the first case personal equation is a factor in determining the base of the ovipositor and in the second case the condition of the specimen and the amount of flexure and compression of the plate may lead to different conclusions.

These specimens have been compared with individuals from Sapucay, Paraguay, which is the only locality aside from the type locality and that given above from which the species is known.

**\*Ceraia cornutoides** Caudell.

1906. *Ceraia cornutoides* Caudell, Proc. U. S. Nat. Mus., XXX, p. 237. [Sapucay, Paraguay.]

Misiones. March 15, 1909. One female.

This individual has been compared with topotypes.

**\*Vellea cruenta** (Burmeister).

1838. *Ph[aneroptera] cruenta* Burmeister, Handb. der Entom., II, Abth. II, pt. 1, p. 691. [Rio Janeiro, Brazil.]

Misiones. April 14, 1909. One female.

This interesting species has been recorded from San José, Costa Rica (Rehn), Demerara (Walker), Para (Walker), and Rio Janeiro (Burmeister; Brunner). This is the most southern record for the species.

<sup>49</sup> *Boll. Mus. Zool. Anat. Comp. Torino*, XII, No. 302, p. 38.

**Scaphura nigra** (Thunberg).

1824. *Gr[yllus] niger* Thunberg, Mém. l'Acad. Imp. Sci. St. Pétersb., IX, p. 415. [Brazil.]

Misiones. December 5, 1909. (No. 2.) One male, one female.

We find no important color differences between the male specimen and individuals from Sapucay, Paraguay, previously reported by us.<sup>50</sup> The female, on the other hand, belongs to the variety B of Brunner,<sup>51</sup> with the description of which it completely agrees.

**Gymnocera elegans** Serville.

1839. *Gymnocera elegans* Serville, Hist. Nat. Ins. Orthopt., p. 427. [Buenos Aires.]

Mendoza, Prov. of Mendoza. Elev. 767 meters. January 5, 1909; January 14, 1907; March 19 and 30, 1908; April 4, 9, and 24, 1908; May 6, 1908; December 13-20, 1907. Two males, eleven females.

Chaeras de Coria, Prov. of Mendoza. Elev. 936 meters. January 1-31, 1907; January 9, 1908; February 4-24, 1907; March 16-30, 1907; April 4-24, 1907; December 5 (juv.), 6 (juv.), 9 (juv.), and 17, 1907. Ten males, twenty-five females, four immature specimens.

Potrerrillos, Prov. of Mendoza. Elev. 1,368 meters. February 23, 1908; December 27, 1907. Two females.

This very interesting series gives us some desirable and definite information on the extent of variation in this variable species as found at a single locality. All of the specimens of the present species are in the color phase which has metallic blue the most striking color characteristic. The variation here noted are all aside from this base color. The color of the tegmina also remains nearly uniform in the series, varying only moderately in the depth of the ferruginous or hazel of the same, the distal blackish area present on the tegmina of all of the specimens seen. The pale maculation on the facial fastigium and that on the fastigium of the vertex are invariably present, as is the broad patch of the same on the ventral portion of the lateral lobes of the pronotum and the oblique pale line on the pleura. The dorsum of the pronotum may be without pale markings, with a single small median pair or with an increasing number of pairs up to four, these always arranged along the median line and variable in size, but always in symmetrical pairs. Frequently the pairs run together, forming bars, which tendency in a single extreme specimen is so complete that we have paired pale lines extending from the cephalic

<sup>50</sup> *Proc. Acad. Nat. Sci. Phila.*, 1907, p. 377.

<sup>51</sup> *Monogr. der Phaneropt.*, p. 258.

to the caudal margins of the disk. The antennæ may or may not be broadly annulate with buffy. In every case the caudal femora have a median buffy white patch.

In size there is considerable individual variation.

The species has been recorded from localities extending from Buenos Aires and Montevideo south to Patagonia and west to Santiago, Chile.

***Stilpnochlora incisa* Brunner.**

1878. *Stilpnochlora* *incisa* Brunner, Monogr. der Phaneropt., p. 361. [Peru.]

Jujuy, Prov. of Jujuy. April, 1911. One female.

This interesting species is known only from Peru, San Lorenzo (Giglio-Tos), and Jujuy, Prov. of Jujuy, Argentina.

\* ***Posidippus dentiferus* (Walker).**

1869. *Steironon dentiferum* Walker, Catal. Derm. Salt. Brit. Mus., II, p. 391. [Locality unknown.]

Misiones. December 20, 1910. One female.

We have followed Kirby<sup>52</sup> in using this name for the present species. Information with our specimen is to the effect that the species is very uncommon.

The localities from which the form is known are Peru, Surinam, Brazil, and the Misiones.

***Anaulacomera argentina* n. sp.**

Type: ♂; Misiones, Argentina. January 1, 1910. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,225.]

Closely allied to *A. laticauda* Brunner from Mexico and Central America, but differing in the angularly emarginate subgenital plate of the male, the longer and less arcuate cerci of the same sex, the slenderer ovipositor of the female, the less compressed pronotum of both sexes, and the broader tympanum of the male.

Size medium; form moderately compressed. Head with the occiput slightly declivent to the fastigium; fastigium broad at the base, strongly constricted mesad, distad moderately bulbous, deeply sulcate on the base and the constricted median portion, the sulcus represented for some distance on the adjacent portion of the occiput by a shallower sulcus, lateral margins of the fastigium elevated mesad and proximad, strongly diverging proximad; fastigium of the front very broad, touching that of the vertex, their contiguous margins subtruncate, the cephalic portions of both subdeplanate; eyes

<sup>52</sup> *Syn. Catal. Orth.*, II, p. 458.

broad-ovoid, very prominent; antennæ reaching to the tips of the wings. Pronotum with the dorsum flattened, the greatest caudal width of the same contained about one and one-half times in its length; cephalic margin of the disk sinuato-truncate, caudal margin moderately arcuate, lateral angles rounded but quite apparent, middle of disk with an impressed U-shaped figure which is connected with the caudal margin by a very faint median sulcus; lateral lobes with the greatest depth subequal to the greatest length, cephalic margin gently arcuato-emarginate, ventral and caudal margin regularly and broadly arcuate, humeral sinus rectangularly incised. Tegmina about one and one-half times the length of the body, regularly lanceolate, the greatest width contained slightly more than five times in the length, apex well rounded; pattern of the tegminal cells similar to that found in many of the other species of



Fig. 29.—*Anaualacomera argentina* n. sp.  
Dorsal outline of apex of abdomen  
of type. ( $\times 3$ .)



Fig. 30.—*Anaualacomera argentina*  
n. sp. Outline of ovipositor.  
( $\times 3$ .)

the genus; median vein diverging two-fifths the distance from the base of the tegmen, furcate, reaching the sutural margin very shortly before the apex; tympanum with the greatest width contained one and one-half times in the length of the same, stridulating vein slightly arcuato-oblique, sutural margin broadly rounded at the apex of the same vein. Wings with the exposed portion surpassing the tips of the tegmina by about the length of the head and pronotum. Cephalic and median femora unarmed on the dorsal margin, tympani of the cephalic tibiæ exposed. Caudal femora about two-thirds the length of the tegmina, moderately inflated proximad, ventral margins armed with one (internal) or two (external) spines distad; caudal tibiæ distinctly surpassing the femora in length. Disto-dorsal abdominal segment with the distal margin arcuato-emarginate mesad, the median portion of the segment with a broad longitudinal sulcus; supra-anal plate acute-trigonal; cerci elongate, tapering, moderately curved mesad, the apex slightly hooked and faintly enlarged, covered with erect hairs; subgenital plate with the median portion somewhat produced, sharply narrowing, the distal extremity deeply V-emarginate, no styles present.

General color of the abdomen maize yellow, passing into dull



chrome yellow on the head and to pale olive yellow on the pronotum. Tegmina and exposed portion of the wings very pale bice green, the femora of the general abdominal color passing into pale apple green on the tibiæ. Eyes walnut brown. Tympanum of the tegmina washed with ferruginous with a dot of seal brown at the base and another at the apex. Dorsal part of the tympanal inflation of the cephalic tibiæ marked with ferruginous.

Allotype: ♀; Misiones, Argentina. April 24, 1909. (P. Jorgensen.) [Acad. Nat. Sci. Phila.]

The following characters are chiefly those of difference from the opposite sex:

Tegmina about one and one-third times the body length; median vein diverging but slightly proximad of the middle of the tegmen. Ovipositor slightly more than twice the length of the pronotum, gently arcuate, very broad, the greatest width contained three and one-half times in the length of the same, dorsal margin almost straight, ventral margin very faintly crenulate distad; subgenital plate subtransverse.

Color as in the male, but the base of the tegmina yellowish (possibly by discoloration) and the dorsum and lateral lobes of the pronotum finely sprinkled with points of ferruginous.

#### Measurements.

	Type (male).	Allotype (female).
Length of body.....	15.5 mm.	16.2 mm.
Length of pronotum.....	3.8 "	3.8 "
Length of tegmen.....	26.5 "	22.5 "
Greatest width of tegmen.....	5. "	4.3 "
Length of caudal femur.....	15.5 "	15. "
Length of ovipositor.....		7.8 "

The typical pair are all we have seen of the species.

#### *Anaulacomera dama* n. sp.

Type: ♂; Misiones, Argentina. January, 1911. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,226.]

Allied to *A. cornucervi* Brunner from Central Peru, having similar very peculiar cerviform cerci, but differing in the smaller general size and in the cerci having the proximal fork non-spiniform, but expanded and moderately palmate, while the distal extremity of the cercus is decidedly palmate, trifold, and incurved.

Size small; form moderately compressed. Head with the fastigium

of the vertex very similar to that of *A. argentina*, but with the bulbous extremity less inflated and the median sulcation not continued over the vertex; frontal fastigium no wider than the fastigium of the vertex, the lateral margins subparallel, the extremity closely pressed against the fastigium of the vertex; eyes similar to those of *argentina*; antennæ surpassing the tips of the wings by nearly the length of the tegmina. Pronotum more compressed than in *argentina*; dorsum subequal in width, the greatest width contained one and two-thirds times in the length of the same; lateral angles distinct, but narrowly rounded; cephalic margin moderately arcuate emarginate, caudal margin gently arcuate, middle of the disk with a V-shaped impressed figure; lateral lobes with the greatest length slightly greater than the depth, cephalic margin arcuato-emarginate, ventral margin gently



Fig. 31.—*Anaulacomera dama* n. sp.  
Lateral outline of apex of abdomen  
of type. (X 3.)



Fig. 32.—*Anaulacomera dama* n. sp.  
Dorsal outline of apex of abdomen  
of type. (X 3.)

arcuate, passing by a little indicated and rounded angle into the oblique arcuate caudal margin, humeral sinus acutely incised. Tegmina nearly half again as long as the body, general form and vein disposition similar to the type found in *argentina*, tympanum shorter and broader than *argentina*, the greatest width contained less than one and one-half times in the length, margin considerably though roundly projecting at the extremity of the stridulating vein. Wings with the exposed portion surpassing the tegmina by about the length of the pronotum. Disto-dorsal abdominal segment with the distal margin truncate-emarginate, strongly emarginate laterad dorsad of the cerci; cerci cerviform, slightly longer than the dorsum of pronotum, when seen from the dorsum strongly arcuate laterad, incurving at the tips which are subcontiguous, when seen from the side there is seen to be a proximal fork diverging ventro-mesad, with its extremity compressed, lamellate, and bidentate, distad of the middle the cercus becomes palmate with one long distal "tine" or fork, and dorsad and ventrad of the same are short acute ones of the same character; subgenital plate short, narrowing distad, the distal margin truncate, flanked laterad by short styliform processes. Caudal limbs lacking.

General color gamboge yellow on the abdomen, passing into dull

sulphur yellow on the pleura, pronotum, and head. Tegmina maize yellow proximad, passing into pale apple green on the distal two-thirds; tympanum with the principal veins lined with burnt sienna; exposed portion of the wings pale apple green. Eyes chocolate.

*Measurements.*

Length of body.....	13.8 mm.
Length of pronotum.....	3.2 "
Length of tegmen.....	17.3 "
Greatest width of tegmen.....	3.4 "

The type of this remarkable species is unique.

\**Grammadera albida* Brunner.

1878. *Grammadera albida* Brunner, Monogr. der Phaneropt., p. 298. [Brazil.]

Misiones. December 22, 1910. (No. 8.) One female.

This species has been recorded from Sapucay, Paraguay (Rehn), in addition to the localities given above.

*Phylloptera ovalifolia* Burmeister.

1878. *Phylloptera ovalifolia* Burmeister, Handb. der Entom., II, Abth. II, pt. 1, p. 311. [South America.]

Misiones. March 18 and 22, 1909. Two males.

This widely distributed species has previously been recorded in Argentina only from Buenos Aires (Serville), while from southern Brazil it has been reported from Theresopolis (Saussure and Pietet), Rio Janeiro (Walker; Brunner), and Santa Catharina (Saussure and Pietet).

\**Phylloptera spinulosa* Brunner.

1878. *Phylloptera spinulosa* Brunner, Monogr. der Phaneropt., p. 314. [Ypanema, São Paulo, Brazil.]

Misiones. March 15, 1909. One female.

This specimen has been compared with a pair from Sapucay, Paraguay. The three localities here mentioned are all known for the species.

Subfamily PSEUDOPHYLLINÆ.

*Dasyscelis normalis* Brunner.

1895. *Dasyscelis normalis* Brunner, Monogr. der Pseudophyll., p. 119. [Uruguay; Buenos Aires.]

Buenos Aires. February 26, 1909. One male.

\**Dasyscelis dilatatus* Brunner.

1895. *Dasyscelis dilatatus* Brunner, Monogr. der Pseudophyll., p. 120.  
[Theresopolis, Brazil.]

Misiones. November, 1910. One female.

This specimen is slightly larger than the original measurements and is very strikingly marked on the pronotum, abdomen, and limbs with seal brown, but otherwise it fully agrees with the description.

The species is known only from the types and the present specimen.

*Nannotettix bilineatus* n. sp.

Type: ♀; Misiones, Argentina. December 10, 1910. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,228.]

Allied to *N. guentheri* and *pallidevittatus* Brunner from Sorata, Bolivia, but differing from the former in the paler face, the absence of black from the pronotum, in the broadly ovate instead of lanceolate tegmina, in the fewer femoral spines, the different subgenital plate and shorter caudal femora and ovipositor; from the latter in the non-tuberculate cephalic margin of the femora and the fewer femoral spines, the different coloration of the femora and abdomen and the longer tegmina. The striking yellowish postocular lines are similar

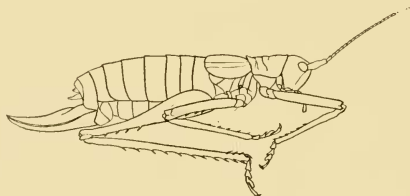


Fig. 33.—*Nannotettix bilineatus* n. sp. Lateral outline of type. ( $\times 1\frac{1}{2}$ .)

to those found in *pallidevittatus*, but the more uniformly colored limbs and abdomen will immediately separate the present species.

Size medium; form rather elongate. Head with the vertex slightly declivent; fastigium acute, reaching to the margins of the antennal scrobes, margins distinctly elevated dorsad of the ocelli, the apex of the fastigium of the front not in contact with that of the vertex; face gently and roundly retreating; eyes subglobose, slightly directed cephalad, indistinctly flattened laterad; proximal antennal joint elongate, armed disto-laterad with a distinct spine. Pronotum with the length of the disk nearly twice the caudal width of the same; cephalic margin of the disk arcuato-truncate, caudal margin moder-

ately arcuate; transverse sulci two in number, the cephalic placed about the cephalic third, the caudal placed immediately caudad of the middle, margins of the pronotum non-tuberculate; lateral carinæ indicated by lines of low tubercles, which gradually converge to the caudal transverse sulcus, then more abruptly diverge to the caudal margin; lateral lobes with the greatest depth contained one and two-thirds times in the length of the lobes, ventral margin slightly sinuato-emarginate caudad, ventro-caudal angle slightly obtuse; surface of the dorsum and the lateral lobes of the pronotum shagreened. Tegmina subequal to the pronotum in length, broad ovate in form, the width two-thirds of the length, the extreme portion of the broadly rounded apex faintly truncate. Supra-anal plate trigonal with a distinct medio-longitudinal impression; cerci brief, acuminate; subgenital plate with the distal margin rectangulate emarginate mesad; ovipositor subequal to the length of the pronotum and tegmina together, moderately arcuate, tapering, ventral margin serrulato-denticulate on the distal fourth. Cephalic femora very slightly longer than the length of the head and pronotum together, unarmed on the ventro-caudal margin, with three spines distad on the ventro-cephalic margin; cephalic tibiæ unarmed dorsad, on the ventral margins with five (caudal) to six (cephalic) spines. Median femora very slightly longer than the cephalic femora, armed on the ventro-cephalic margin with two to three spines, unarmed on the ventro-caudal margin; median tibiæ unarmed dorsad, ventro-caudal margin with four to five spines, ventro-cephalic margins with five to seven spines. Caudal femora about three times as long as the tegmina, moderately robust, considerably inflated proximad, ventro-cephalic margin with four decided distal spines, ventro-caudal margin unarmed; caudal tibiæ slightly exceeding the femora in length, well spined.

General color raw umber, becoming burnt umber on the dorsum of the head and pronotum, the tegmina walnut brown. Head with the face and portions of the genæ straw yellow; a narrow postocular line Naples yellow; eyes tawny ochraceous; antennæ distad of the second joint tawny. Pronotum with the postocular line of the head continued caudad over the tuberculations of the pronotum as narrow lines of Naples yellow. Ovipositor with the margins and apex washed with burnt sienna. Cephalic and median femora ferruginous, becoming darker distad; cephalic and median tibiæ vinaceous-cinnamon, rather darker proximad. Caudal femora ferruginous, slightly darkened distad, spines yellowish with the tips burnt sienna; caudal

tibiæ cinnamon-rufous with the tip slightly washed with burnt sienna.

*Measurements.*

Length of body.....	23.	mm.
Length of pronotum.....	5.	"
Length of tegmen.....	5.	"
Length of caudal femur.....	15.8	"
Length of ovipositor.....	9.8	"

The type of this species is unique. Information with the specimen is to the effect that the species is "common."

Subfamily CONOCEPHALINÆ.

\* *Paroxyprora tenuicauda* Karny.

1907. *Paroxyprora tenuicauda* Karny, Abhandl. K. K. Zool.-bot. Gesell. Wien, IV, p. 13. [Rio Grande do Sul, Brazil.]

Misiones. December 29, 1909. One male.

The present male fully agrees with the individual of that sex from Puerto Bertoni, Paraguay, previously reported by us.<sup>53</sup>

The three localities here mentioned are all known for the species.

\* *Caulopsis gracilis* Redtenbacher.?

1891. *Caulopsis gracilis* Redtenbacher, Verhandl. K. K. Zool.-bot. Gesell. Wien, XLI, p. 377, pl. III, fig. 25. [Brazil; Buenos Aires; Montevideo; Rosario; Cuba.]

Misiones. December 12, 1909. One female.

This specimen is referred to the present species with some doubt, as it is considerably smaller than the measurements of the same sex given by Redtenbacher. The dimensions of our individual are as follows: length of body, 38.5 mm.; length of fastigium, 6; length of pronotum, 8.9; length of tegmen, 43.5; length of median femur, 7.7; length of caudal femur, 19.5; length of ovipositor, 20.5. Aside from the differences in measurements and the hardly carinate instead of "obtusely" carinate venter of the fastigium, our specimen agrees with the original description.

\* *Neococephalus muticus* (Redtenbacher).

1891. *Conocephalus muticus* Redtenbacher, *ibid.*, XLI, p. 393. [Cuba; St. Vincent, Lesser Antilles.]

Misiones. March 5, 1910. (No. 3.) One female.

This specimen very satisfactorily answers the description of the species, previously known only from localities in the West Indies, Central America and northern South America.

<sup>53</sup> *Entom. News*, XXII, p. 254.

\* *Neoconocephalus redtenbacheri* Karny.

1907. *Neoconocephalus redtenbacheri* Karny, Abhandl. K. K. Zool.-bot. Gesell. Wien, IV, p. 32. [Rio Grande do Sul, Brazil.]

Tucuman, Prov. of Tucuman. March 16, 1911. One male, two females.

These specimens agree fully with the original description of the species. The male and one female are in a green phase, while the other female is in a brown phase very closely resembling *N. obscurellus*, from which it can be separated by the narrower fastigium.

The type locality and Tucuman are the only points from which the species has been recorded.

\* *Neoconocephalus saturatus* (Griffini).

1891. *Conocephalus saturatus* Griffini, Miscell. Entom., VII, p. 5. [Based on *Conocephalus infuscatus* Redtenbacher (not of Scudder); Medellin; St. Vincent, Lesser Antilles; Cuba; Venezuela; Surinam; Cayenne; Brazil; Rio Grande and Theresopolis, Brazil.]

Buenos Aires. January 14, 1909. One male.

Misiones. March 16, 1911. One male.

*Neoconocephalus macropterus* (Redtenbacher).

1891. *Conocephalus macropterus* Redtenbacher, Verhandl. K. K. Zool.-bot. Gesell. Wien, XLI, p. 402. [Mexico; Martinique; St. Vincent, Lesser Antilles; Cuba; San Francisco and Pernambuco, Brazil; Peru; Buenos Aires.]

Posadas, Misiones. Elev. 80 meters. March 6, 1909. One female.

This specimen has been compared with individuals from Rosario, Argentina, Mexico, and the West Indies.

\* *Agræcia maculata* Redtenbacher.

1891. *Agræcia maculata* Redtenbacher, *ibid.*, XLI, p. 455, pl. IV, fig. 63. [Theresopolis, Brazil.]

Misiones. November 12, 1909. One male.

This specimen has been compared with individuals from Sapucay, Paraguay.

*Conocephalus longipes* (Redtenbacher).

1891. *Xiphidium longipes* Redtenbacher, *ibid.*, XLI, p. 505, pl. IV, fig. 81. [Buenos Aires; Montevideo; Rio Grande do Sul and Santa Catharina, Brazil; Peru (?).]

Misiones. March 30 and April 19, 1909. One male, one female.

Buenos Aires. February 26, 1909; May 3, 1907. One male, one female.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 11, February 16, and April 7, 1907. Four males.

Mendoza, Prov. of Mendoza. Elev. 767 meters. April 4 and 9, 1908. Two males.

San Ignacio, Prov. of Mendoza. Elev. 1,235 meters. March 15 and 22, April 5, 1908. Five males, six females.

These specimens have been compared with material from Caracaraña, Argentina, and Rio Grande do Sul, Brazil, determined by Bruner and Saussure, respectively.

\* *Phlugis spinipes* (Fabricius).

1775. [*Locusta spinipes* Fabricius, Syst. Entom., p. 283. [Brazil.]

Misiones. September 1, 1910. (No. 6.) One female.

We have followed Kirby<sup>54</sup> in using this name for the species in place of *tener* Stål.

The only previous definite record for the species at all near that cited by us is São Paulo, Brazil.

Family **GRYLLIDÆ.**

Subfamily GRYLLOTALPINÆ.

\* *Scapteriscus borellii* Giglio-Tos.

1894. [*Scapteriscus*] *borellii* Giglio-Tos, Boll. Mus. Zool. Anat. Comp. Torino, IX, No. 184, p. 45, pl. figs. 12 and 15. [Colonia Rizzo, Rio Apa, Paraguay.]

Misiones. December, 1910. One male.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. December 9, 1907. One male.

These specimens accord fully with the original description and figures. The species is here first recorded from Argentina.

Subfamily GRYLLINÆ.

*Nemobius longipennis* Saussure.

1874. *Nemobius longipennis* Saussure, Miss. Scient. Mex., Rech. Zool., VI, p. 383. [Buenos Aires.]

San Juan, Prov. of San Juan. Elev. 673 meters. January 20, 1909. One male, six females.

Pedregal, Prov. of Mendoza. Elev. 696 meters. December 14, 1906. Two females.

These specimens fully agree with the original description of the species. Previous records are from Paraguay and Asuncion, Sapucay<sup>55</sup> and Villa Rica, Paraguay; Santa Rosa, Salta, and San Pablo, Tucuman, Argentina.

<sup>54</sup> *Synon. Catal. Orth.*, II, p. 285.

<sup>55</sup> The material recorded by Caudell from Sapucay as *N. fasciatus* (*Proc. U. S. Nat. Mus.*, XXX, p. 243) belongs to this species, the two males there recorded having been examined by us.



**\**Nemobius rufus* Saussure.**

1877. *Nemobius rufus* Saussure, Mém. Orthopt., V, p. 256. [Brazil.]

Misiones. December, 1910. One male, one female.

The present specimens answer the original description very well, except that the last article of the palpi bears no black and the wings are fully developed and caudate. The latter fact shows the species to be dimorphic in wing length. The general appearance of the species is very similar to that of *N. longipennis*, but *rufus* can be separated from the latter by having the ovipositor longer, the dorsal margin of the apex of the same serrulate instead of serrate and the disto-dorsal spurs of the caudal tibiae unequal in length instead of equal.

The species is only known from the type locality and the Misiones.

***Gryllus argentinus* Saussure.**

1874. *Gryllus argentinus* Saussure, Miss. Scient. Méx., Rech. Zool., VI, p. 399. [Southern Brazil; Argentine Republic and the north of Patagonia; Buenos Aires; Bahia Blanca; Rio Negro of Patagonia.]

Misiones. December 30, 1910. (Nos. 2 and 3.) Two females.

Mendoza, Prov. of Mendoza. Elev. 767 meters. December 20, 1907. One male.

Chacras de Coria, Prov. of Mendoza. Elev. 936 meters. January 16, 1908. Two females.

One Misiones female has the wings caudate, the others having them not exceeding the tegmina. A typical female from Buenos Aires, received from Saussure, has the wings no longer than the tegmina.

Subfamily ECANTHINÆ.

***Ecantus* sp.**

Misiones. March 29 and December, 1910. Two males, one female.

These specimens are too imperfect to be determined with certainty.

***Neoxabea brevipes* n. sp.**

Type: ♀; Misiones, Argentina. November 6, 1910. (P. Jorgensen.) [Acad. Nat. Sci. Phila., type No. 5,229.]

Closely related to *N. bipunctata* (De Geer), from which it differs in the less projecting ventral margins of the lateral lobes of the pronotum, the shorter limbs, the shorter caudal tarsi and more uniform coloration. One of the more apparent differences is that the inflated proximal portion of the cephalic tibiae is less than half the entire length of the same in *bipunctata* and a full half that length in *brevipes*, the whole tibiae also being more robust in the new form.

Size medium; form as usual in the genus. Head with the occiput

slightly concave; eyes ovoid, rather small, not at all prominent when seen from the dorsum; antennæ with the node on the proximal joint well developed, the tips of the antennæ surpassing the tips of the tegmina. Pronotum of the general type found in the



Fig. 34.—*Neoxabea brevipes* n. sp. Dorsal outline of pronotum of type. (× 4.)

genus, narrow cephalad, regularly and considerably expanding caudad, the greatest width contained one and one-quarter times in the length of the same, cephalic margin of the disk truncate, caudal margin arcuato-sinuate laterad, disk with a pronounced transverse sulcus near the caudal margin, immediately cephalad of which is an incomplete circular sulcus, the imperfect portion of which is cephalad; ventral margins of the lateral lobes but little projecting, when seen from the lateral aspect this margin is slightly emarginato-sinuate dorsad of the insertion of the limbs, slightly arcuato-

lobate immediately caudad of the same. Tegmina slightly more than twice the length of the head and pronotum together, of the general character found in females of this genus; dorsal field with the general pattern of the venation regularly oblique, the areas more regular, more numerous and smaller than in *N. bipunctata*; lateral field broad, deeper than the breadth of the dorsal field, reticulations more numerous and smaller than in *N. bipunctata*. Wings projecting caudad of the tegmina a distance equal to nearly two-thirds the tegminal length. Ovipositor shorter than the combined length of



Fig. 35.—*Neoxabea brevipes* n. sp. Outline of cephalic limb of type. (× 3.)



Fig. 36.—*Neoxabea brevipes* n. sp. Caudal tarsus of type. (× 6.)

the head and pronotum. Cephalic and median limbs very short, the cephalic femora hardly as long as the head; cephalic tibiae very slightly longer than the femora, the inflated area surrounding the tympanum slightly longer than the narrow subequal distal extremity. Median limbs equally short as the cephalic ones. Caudal femora about two-thirds the length of the tegmina, when extended caudad reaching only to the base of the ovipositor, slender; caudal tibiae slightly longer than the femora; caudal tarsi very short when compared with those of *bipunctata*, the metatarsi comparatively shorter, no long than, instead of distinctly longer than, the remaining joints of the tarsi.

General color of the head, pronotum, dorsum of tegmina, and exposed portion of the wings prout's brown, lateral aspect of the tegmina and the limbs wood brown. Eyes dull ferruginous; antennæ dull Naples yellow. Several irregular linear touches of seal brown are placed on the dorsal side of the humeral trunk on the distal half of the tegmina, these markings being co-extensive with certain linear cell areas of the same region. Ovipositor obscure burnt sienna with the tips blackish. Femora distinctly sprinkled with points of burnt umber, the tibiæ with a few of the same character; the spots on the femora disposed in linear and, as a rule, balanced series.

*Measurements.*

Length of body.....	17.	mm.
Length of pronotum.....	3.3	“
Length of tegmen.....	12.3	“
Length of exposed portion of the wing.....	7.2	“
Length of caudal femur.....	7.3	“

The type of this very interesting species is unique.

Subfamily TRIGONIDIINÆ.

***Thamnoscirtus amœnus*** (Burmeister).

1880. *Phylloscirtus amœnus* Burmeister, Abhandl. Naturfor. Gesell. Halle, XV, p. 18, pl. 1, figs. 8-10. [Mouth of the Riachuelo, Buenos Aires, Argentina.]

Buenos Aires. February 20, 1909. Three males, one female.

This striking species is a true *Thamnoscirtus*, and not a *Phylloscirtus*, the head being vertical and not at all horizontal. Saussure has described a very closely related species from Guiana as *Thamnoscirtus viridicatus*.<sup>56</sup>

Giglio-Tos has recorded this species from the Province of San Pedro, Paraguay, as ? *Thamnoscirtus cicindeloides* Gerstaecker,<sup>57</sup> later correcting the determination to *Phylloscirtus amœnus*.<sup>58</sup>

Subfamily ENEOPTERINÆ.

***Diatrypa tuberculata*** Saussure.

1874. *Diatrypa tuberculata* Saussure, Miss. Scient. Méc., Rech. Zool., VI, p. 479. [Buenos Aires.]

Misiones. April 30, 1910. (No. 1.) One male.

This species has been recorded only from Buenos Aires, the Misiones and Sapucay, Paraguay (Caudell). Our specimen is striped on the pronotum in a similar fashion to the female examined by Caudell.<sup>59</sup>

<sup>56</sup> *Biol. Cent.-Amer.*, Orth., I, p. 240.

<sup>57</sup> *Boll. Mus. Zool. Anat. Comp. Torino*, IX, No. 184, p. 40.

<sup>58</sup> *Zool. Jahrb.*, Abth. Syst., VIII, p. 816.

<sup>59</sup> *Proc. U. S. Nat. Mus.*, XXX, p. 243.